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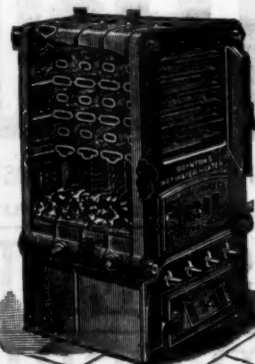
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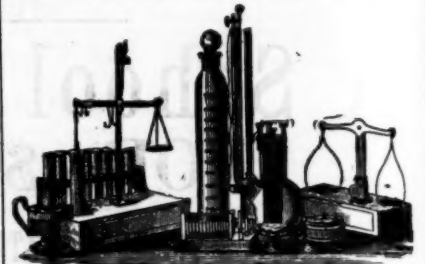
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CONTENTS.

EDITORIAL.

Progress—Women in the School—How Systems are measured—Two Kinds of Laborers—Special Schools...	195
The Inward Call	196
The West New Brighton School-House	197
Professional Preparation	197
The School and Life	197

EDITORIAL NOTES.

THE SCHOOL-ROOM.

History and Geography	198
Lessons on the Stars	198
A Geography Excursion. By A. F. H.	198
Counting and Reading Numbers	198
Fractions by Objects	199
An Attendance Record	200
For the Geography Class	200

OUR TIMES.

Of Special Interest to Pupils	201
-------------------------------------	-----

CORRESPONDENCE.

.....	202
-------	-----

EDUCATIONAL NOTES.

New York City	203
---------------------	-----

BOOK DEPARTMENT.

New Books	204
Announcements	204
Magazines	204

The SCHOOL JOURNAL is sent regularly to its subscribers until a definite order to discontinue is received, and all arrears are paid in full.

COPYRIGHT, 1890, BY E. L. KELLOGG & CO.

THE saddest feature of the opening of our schools is the change among teachers. Old faces disappear, new ones are seen. Change isn't progress, although progress always means change. Yet it is a fact that the newness is apparent. We have a new arithmetic, a new language book, a new history, a new science, and a new kind of teaching. But all these new things are not goodness by a long shot. The good is what we want. The question of all questions, underneath all other questions, is, "What is progress?" How shall we know it? What marks, characteristics, and signs has it? Who can give us its photograph?

It isn't by any manner of means certain we are moving when we think we are. The other day we were sitting in a car at a station, expecting every minute to start. Soon we moved, so silently, so slowly, and yet so certainly. We squared ourselves for the trip, when lo! we looked up and found ourselves just where we were. We hadn't moved an inch. Something else moved, and we thought that we moved, and something else was standing still.

This is exactly as it is in progress. Somebody else moves—we think we are moving, and that the other party is standing still. It is a clear case of deception.

Dissatisfaction is preparation for progress. A dissatisfied man who doesn't move on is about the worst friend we could have, but a dissatisfied fellow who is moving on is a pretty good companion.

Progress is knowing what is better, and acting up to the light we have. It is getting opposite a port and running into it; in other words, it is *opportunity* and *will*, or opportunity, motive power, and common sense. This is educational philosophy, or rather under it.

ARE women to go out of our schools, or are they to stay in and increase. Theorists have decided that woman has not been and is not to be the educator of the human race, yet theorists generally have been wrong. For example, theory proved that a steamboat could never cross the ocean, and carry anything else but coal. The fact was, that soon after this prediction a steamship did cross the ocean, with plenty of fuel, and a paying cargo besides. Theory predicted the downfall of this republic before the close of its first hundred years. The fact is it is more prosperous and more likely to live than ever before. The fact that an education should touch the real life that is, and not the theoretical life that is not, is now established. Theoretical subjects must take the back seat, and practical ones come to the front. This is the clear decision of the present decade, and it is as useless to attempt to ignore it as it would be to ignore the decisions of the Supreme Court of the United States. Now it is as plain as sunlight can make it, that if woman adds to the qualification of heart she now has, the thorough culture of the head, and executive and administrative ability, she will keep her place in our schools. If she fails to do this, she will lose it.

SUPT. GREENWOOD closes a lively article with this suggestive sentence:

"Systems are to be measured by what they do for their pupils, and what the pupils are able to do for themselves."

This is sound as a nut. What can be better? What can be truer? Nothing in all the boundless Universe. Take any system—Buddhism, for example, and see what it has done for its followers, by making them able to do something, worth doing, for themselves. If we were to suggest any change in Supt. Greenwood's statement it would be an enlargement of his proposition somewhat like this: "Systems are to be measured by what they enable their pupils to do for themselves."

Now in this light compare Mahomet and Christianity. Look at the past thousand years and decide which is better. What have the followers of Mahomet done for themselves? What have Christians done? Here we have the test of the ages which is, after all, the only true test we have—experience.

Applying this to grammar and language textbooks, we can quickly tell how much the whole lot of them is worth as aids to language expression. Have they made authors, editors, magazine writers, or even good letter writers? If there is anything the average graduate hates to do it is to write his graduating essay or oration. The art of expression is not even professed to be given by a study of grammar.

But how about the language exercises, now so numerous? Supt. Greenwood's opinion of them is sound. How supremely silly it is for a sensible woman to stand before her class and make her pupils say:

The horse is red.
The horse is large.

The horse is strong.

The horse is red, large, and strong.

There is no language here. Nobody talks that way but infants and idiots. There is genius in the composition of the "small boy," who wrote about a horse in the following way:

"The horse has a head on one end of him, a tail on the other, four legs under him, a hide around him, and a stomach, internals, and other things inside him."

This boy will either make a Mark Twain, or an eminent preacher one of these days. There is nothing cut and dried here. He is an embryo genius, and if grammar and language lessons are kept out of his reach, he will use American English with force and wit.

The spirit that leads some teachers to cling to the tradition that a child can learn to write and speak his language by learning a grammar, is on a par with that other spirit that taught that a poor sinner could starve himself into glory. There are signs that a new era of common sense is dawning in regard to all language teaching. Teachers are getting their eyes open, their intellects enlarged, and their convictions settled. Common sense is going to rule the future language teacher, and the result will be too delightful for expression. Literature will be appreciated for its beauty, and not as a dead subject for the use of the grammatical demonstrator of anatomy, to be cut up and hung on hooks or parallel bars all in order, according to natural relations. Just think of it! Diagramming Longfellow's "Psalm of Life," or dissecting that most stirring production of his, "The Building of the Ship." Just think of it! It is just about as sensible as it would have been to have turned over Longfellow's body to the demonstrator of anatomy of the Massachusetts medical college.

WE have commented on the action of the business men of Spokane Falls who took the places of the striking carpenters and worked the same number of hours per day; but it now turns out that these greenhorns performed fifteen per cent. more work than the men who quit. This seems, at first, a singular fact but, on a little thought, it will be seen that the result is quite natural. The carpenters worked mechanically, not exerting themselves to do more than was absolutely necessary in order to get their wages, but the greenhorns, who were deeply interested in the work at hand threw their whole soul into the business, and more than made up by their earnestness for their want of experience in handling tools. There could be no more striking illustration of the difference between two kinds of laborers: one, who is always listening for the noon and night signal, and drops his tools as soon as the clock strikes; the other, who enters into his work with the earnestness and sincerity of one who loves his business, and works without regard to time. The mechanical workman will always remain automatic and so never rise in his business. This applies to teaching as well as to driving nails and laying brick; for there are two kinds of brain workers as well as two kinds of hand workers.

IT has often been said in these pages that the day of special schools is sure to come. It is proposed now to have a school to teach watch repairing to women. There are schools to teach nursing, cooking, typewriting, shorthand, dressmaking, dress cutting, tailoring, and yet there is room for a dozen more. The above is only a small list.

WHY should there not be advance in our profession? All other professions and trades are improving; why not ours? Where there is life there is growth. If in any place there is no growth, what can be concluded but that there is death?

THE INWARD CALL.

Recently President Hastings delivered a very excellent address before the Union Theological Seminary on the "Call to the Ministry." He told of the voices of the world, the appeals of the church, and the call of God; and said that the only real call to the ministry was that which is divine. He answered two questions: "How does God call men?" and "How can the call be recognized by the church?" Now, this is a subject as interesting to teachers as to ministers; for, unless the minister is a teacher, he is nothing. The element of success in the minister lies in the fact that he is, first of all, a teacher. President Hastings laid great stress upon the inward call, and denounced, in no measured terms, those who entered the ministry for the purpose of personal emoluments, popular applause, or pecuniary gain. To his mind no preacher of the Gospel should ask first, "Will it pay?" but, "Am I called to preach?" The minister who asks first, "Can I receive an adequate compensation if I preach?" is not fit to receive any compensation at all, and he who asks, "Can I make money out of teaching?" is not fit to teach. The money comes as an incident, not as an end. It is true, and always has been true, that real teachers do not teach for money. Socrates did not; Plato did not; Comenius did not; Horace Mann did not; neither does the successful district school teacher, this fall, who is getting barely enough to keep soul and body together.

But some teachers will say, "I must have a living." This is true, and it is also true that no earnest, thorough-going teacher who enters the work from the force of an inward call will ever lack support. The truth is, those who, like David Page, think not of the money, but of the work, are those who receive the best pay, and secure the most permanent positions. There are exceptions, it must be admitted, but no real teacher, consecrated to his calling, will lack either place or pay. Yet the time has not come, and never will come, when teaching will be undertaken as a means of fortune getting. It is not probable any man will enter Wall street for the glory of God; neither will the time come when the money seeker will undertake school-work for the millions in it. Devoted teachers are not rich, and it is well they are not. They cannot be; for, as soon as they become rich, they lose the spirit—that is, if money getting has been the object of their lives.

Wealth may be given to a devoted teacher, and she may make excellent use of it; but the elements of character needed at the present time, in order to make money, are not those that develop the highest type of manhood. *Character comes through self-sacrifice in working for others*, and it is character that tells in the school-room, and in the preacher's desk, more than talent. The examination of the teacher may indicate excellent mental qualification, but scholastic attainments do not constitute a call to teaching. This is inward, deep, and comes from a higher source. The true teacher, as the true preacher, feels "Woe is me if I do not teach." Pestalozzi was of this class. Money to him was nothing; teaching, everything. If he had starved in the business he would have taught, and the truth is, there were several times in his life when he was in danger of starvation, and yet he never thought of giving up the work to which he had devoted his life. There was in him an inward voice calling him, "Teach! Teach! Teach!" He did not disobey this voice, and we know its result.

Socrates, over and over again, professes that the "inward voice" spoke to him, directed him, and even commanded him, to do certain things. He obeyed this voice, even in drinking the fatal hemlock, for, when the way was pointed out by which he could have saved his life, he refused all means of escape because the "inward voice" spoke to him that it was fitting his life should be closed in the way the public assembly had decreed. When David Page went to Albany from Massachusetts, the "inward voice" told him to go, and he followed its admonitions, until he laid down his life. The

"call" of the teacher is as imperative and as sacred as the call to the ministry. It is, in reality, the call of God, and so is divine.

A devoted woman in Vermont, living in a community where there was no preaching, established a weekly service, and secured a young man to conduct it. After he had officiated for several Sundays she said to him, "You must become a Methodist preacher." He answered, "I am not a member of the church." She replied, "You are called to be, not only a member of the church, but a preacher. Obey it." He did obey it, and became Bishop Hedding, a name familiar to every Methodist in the country. Here the call came before the preparation. So it is in the case of teachers—the call often comes before there is fitness. We have no doubt that some teachers with comparatively poor preparation succeed, because there is in them a character and an earnestness that develops the very best qualities in the children under their care. Scholastic preparation is important; it should not be, by any means, lowered; but there is something more important, and that is, *character*; and character is the result of an inward call that leads to the doing of what is good and true and beautiful, because in the teacher there are elements that will assuredly produce these results.

SEVERAL preachers in this city have undertaken to discuss the religious aspect of public education. The Rev. Dr. Wiley divides their views into three classes: first the Roman Catholic,—that education applies to the church, and not to the state; second, the Secularist,—that no religion and no religious morality should be taught in the public schools; third, the Protestant,—that there should be, in the schools, religious but not sectarian instruction. These divisions seem to include all the various phases of thought on this subject. As educational thought becomes broader, it will be realized more clearly that religion applies to no sect and no state, and therefore cannot be controlled as a state church is controlled. We are coming to understand that the idea of right springs up in the mind of the child as soon as it is old enough to think with clearness and to act with intelligence in reference to some special object. Morality is not dependent upon sectarian religion; neither is general religion dependent upon morality. A religion may become, and often has become, the source of gross immorality. We want morality, and we want it enforced by the divine law coming from the Christian religion. Nothing short of this will save our country. But while we want all this we don't want sectarianism.

REV. A. R. HORNE, editor of the *National Educator*, thinks that W. T. Harris, our worthy commissioner of education, was wrong when he said at the National Association:

"Virtue and intelligence are not a product of nature, but of education, moral and intellectual. Education of all citizens in schools is therefore a supreme concern in this nation." Mr. H. says:

"We deny most emphatically that *virtue* is a product of education. It is a product of divine grace, of a heart renewed by the Holy Ghost. It is 'God who worketh within us both to will and to do.' While it is not expected of the United States commissioner, in his high and responsible position, to teach theology, it is not his sphere, on the other hand, to promulgate doctrines, which are entirely at variance with the teachings of the men of God of all ages."

Dr. Harris by virtue means moral excellence, we suppose. A good many believe that moral excellence comes from our "bringing up." No one so firmly believes in "bringing up" as those who also rely on divine grace. They tell us to "Train up a child in the way he should go" if you want him to be a good man. (Reprinted from last week, the quotation marks having been omitted.)

THE questions asked by children often reveal their character; they show the bent, desire, and turn of the mind. By carefully studying the nature of these, the motives that prompt, we will have valuable material for the study of the child's mind.

DELEGATES from societies for the prevention of cruelty to children and animals held a convention at Albany last week and a plan for the formation of a state organization, to hold sessions in Albany annually, was adopted, and officers were chosen, of which Elbridge T. Gerry, New York, is president. Every teacher should take an active interest in such organizations. Nothing marks the grade of civilization so exactly as the care taken of dumb animals. Even very young children can be taught early, to be tender and kind to the most insignificant creatures that crawl under their feet. Kindness is the parent of love.

THE secretary of the Board of Regents of this state, has been asking a report upon so many points that there has come to be a sort of a revolt, and President Webb, of the College of the City of New York, has written an open letter to Secretary Dewey in reference to his annual report. He thinks these reports heretofore have not given information of especial value to students of higher education, and in order to facilitate research and comparison and to show to every one interested what the colleges and academies of the state are, and what they really are doing, he indorses the opinion of Mr. Dewey that a much fuller official statement, published every three years or so, would exhibit the true character and development of higher education in New York far better than these brief annual summaries have done.

General Webb states that the reports of the Board of Regents might advantageously give the nature and character of each institution and its gradual development since its origin, the educational work proposed, the actual work done, and a financial statement. This and no more.

As adaptation is the law of the universe, so it is the law of all educative work, as, for example, school and missionary enterprises. It has been said that missions do not prosper as they should, because many missionaries do not understand the nature of the religion of the people they are trying to convert. This is the very reason some schools do not prosper—teachers in them do not understand the nature of the beings they are trying to educate. Every teacher is a missionary, sent to convert the little world around him. Some missions fail for the same reason some schools fail, because of the faulty way in which they are conducted. We are learning that the world of grown-up people can no more be converted by dogma and creed, than the world of children can be educated by book and rule. There are uneducative missionaries for the same reason that there are uneducative teachers. The laws of influence are the same in the church as in the world.

LIBRARIES improve just in the proportion as school systems improve and it makes no difference whether the school be high or low. Harvard college has been growing better for several years and so the necessity for greater library and reading-room accommodations has become imperative. The students have now taken the matter in hand, and have succeeded in arousing the interest of the alumni to such an extent that the most prominent graduates have consented to do whatever they can to aid the movement. Every school should imitate this example. Good, interesting books adapted to the wants of pupils are absolutely necessary to the making of a good school. Books are like the flies of old Egypt in number, but teachers should carefully discriminate, only getting the best—the very best, even though they cost a little more.

"THE simple tearing up of paper into pieces, or cutting it into snips with scissors, is a great relief to the mind after hard work over problems, and even while trying to solve difficult ones," said a teacher of mathematics in one of the city schools to a *Times* reporter. "I have not studied out its psychological reasons, but it certainly has an influence on the mind. Time after time I have tried it with the pupils and found it had a very soothing effect when the children have fretted themselves over hard problems until they have gotten into a state of nervous irritability. I tell them to just lay aside the problems for a while and tear up paper. It is astonishing how soon they get composed again. Tying strings into hard knots is another device, and works very well. It certainly has a resting influence. Afterward the pupil goes to the problems again really refreshed."

PLAY is nothing if, in the end, it is nothing but play. In educational play there is method and science. The child does not see it, but the teacher does. Froebel saw this when he devised the kindergarten.



THE WEST NEW BRIGHTON SCHOOL-HOUSE.

The new school-house at West New Brighton, Staten Island, ranks second in size among the school-houses of the state, being larger than any in New York or Brooklyn. The building is in the second school district of the town of Castleton, county of Richmond, and the site is in Broadway, near Market street, West New Brighton. It is on a slight elevation and faces to the westward, commanding a fine view of the hills and the New Jersey shore. The building was begun in August, 1889, and the rooms are to be ready soon, as the last finishing touches are nearly completed. It is built of Staten Island wash brick, with terra cotta trimmings, and has a length of 170 ft. on Broadway, with a mean depth of 76 feet. It is divided into a central part and two wings, and has three stories, each with eight class rooms. Each class room is so constructed that the pupils when seated will have the light from the ample windows on their backs and left sides. In the top story is a large assembly room for public exercises. One class room is divided from another by a hallway twelve feet wide. The stairways are ten feet in width, and are constructed of iron, slate, and brick. Paint has been used only on the metal work, which has been bronzed, to imitate phosphor bronze. The interior wood-work is of white pine, oiled.

Particular attention has been paid toward heating the building and providing it with the latest approved method of ventilation. The building is to be heated by a huge furnace that will cause the heated air to circulate through the building and then return to the basement to cremate or evaporate the contents of the cesspools. In the basements of the wings are two large play-rooms.

The commanding feature of the building is the brick and terra cotta tower, sixteen feet square, that rises in the center of the structure to the height of 120 feet. It was designed after the style of the English architecture of the early part of the seventeenth century. The clock dials are to be luminous. This school-house, which is the second largest in the United States, will accommodate comfortably about 2,000 pupils. E. A. Sargent is the designer. The cost, exclusive of the several acres of ground which surround it and the grading, was \$60,000.

PROFESSIONAL PREPARATION.

The means and processes of education constitute the most important topic of human thought ever proposed to the intellect of man. Political themes, religious doctrines, and the problems of social philosophy are among its most important subdivisions.

THE STUDY OF NATURE FIRST.

But first of all there must be a study of nature; her language must be translated; at her feet we must sit, to her whisperings we must listen, and her spirit we must absorb. She is the great normal teacher, and her vast domain the great normal school. Professional education commences when a teachable spirit is brought to the feet of nature.

CHILD-STUDY A NECESSITY.

Could all the great teachers of the ages be brought to life,

for the purpose of formulating as perfect a system of educational doctrine as it is possible for the human mind to create, they would first of all call a little child and set it in their midst; for it is only from the study of children in their growth from infancy to maturity that a system of educational psychology can be formed.

METHOD EVERYTHING.

In the natural growth of children as well as in all the other operations of nature there is method; and since method is everything in nature, it must be everything in education; and as nature has but one way of doing a certain thing, with variations under fixed limitations, so in education there is but one way of reaching a certain result, with deviations under fixed restrictions. A seed grows, a stone falls, and a chemical compound is made in accordance with fixed laws. From the remotest times these methods have not changed. Children have always learned as

they do now and the time will never come when they will learn differently. Socrates' philosophy is just as fresh as when he lived and just as applicable to the needs of to-day as the very newest applications of Col. Parker. The children of Adam learned just the same as the children of Garfield. In Eden or out of it, in Paradise or in Chicago, the method of learning is the same and it always will be as long as mind is what it is.

METHOD UNCHANGING.

The rose family is a large one, but there are certain characteristics of leaf, fruit, and flower that mark its name wherever it may be found. Nature produces a perfect rose, man has learned how to improve it, but no florist, however long he may try, can ever transform a rose into a pea. It is foreordained to remain a rose. So the Indian learns many of the operations of nature, and through nature's processes makes considerable advancement in certain kinds of knowledge. By intensifying and repeating these processes, he may become a commanding man of civilization, but he does not reach this height by following out any new laws of activity. His education both in Oxford and under the unobstructed canopy of heaven is obtained by precisely the same methods. Often that which is called education is not education. It dwarfs, cripples, and cramps; but whatever draws into harmonious and healthy action the powers in human nature is the same in principle for all times, under all circumstances, in every nation, in every school, under all teachers. The laws of nature are unchangeable: the laws of teaching being a part of the laws of nature, must be unchangeable also.

THE GREAT WORK OF THE TEACHER.

It follows then that the great work of the teacher in a course of professional preparation must be a systematic and thorough study of the method of nature in her education of a human being. This is the simple foundation-stone upon which the whole educational temple must be built.

All the greatest teachers have been discoverers of methods. Socrates gave to the world the method of human thought, Euclid the scientific method of geometry, Bacon the method of universal philosophy, and Locke the method of educating a child through means within the comprehension of his senses. Pestalozzi and Froebel were effective expounders of the methods of Bacon and Locke. The two greatest minds the world has produced, Bacon and Shakespeare, are only great because they are discoverers of methods—one of human thought, the other of human action.

Here has been outlined the matter and means of professional preparation. Its study is the nature of man and its methods those of childhood in attaining growth and maturity. The true teacher follows in the line of childhood's wants, needs, likes, and dislikes.

Pestalozzi did this in closely following his great teacher—Christ. We must do the same.

It is really astonishing how few things are absolutely necessary in this life. The things that appear unnecessary to a savage are the very things that make our civilization so magnificent.

THE SCHOOL AND LIFE.

(The following thoughts were written in October, 1888, by the lamented State Superintendent Higbee, of Pennsylvania, a little more than a year before his death. There is so much of value in them that they are published in THE JOURNAL. They are a part of a communication to the legislature of Pennsylvania.)

"The common schools are intended to take charge of the education of all the youth of the commonwealth. The constitution itself requires it, in language to which the people have nobly responded—'The general assembly shall provide for the maintenance and support of a thorough and efficient system of public schools wherein all the children above the age of six years may be educated.' Inasmuch as the great majority of school children within the commonwealth graduate from our common schools with but little if any prospect of further systematic instruction before entering upon their life-work, it is a matter of supreme import, and such is the intent of the constitution, that they shall gain a general, practical knowledge of those ordinary pursuits of life which must demand their subsequent intelligent action. It is not enough that they be able to read, and write, and cipher, although these are of fundamental importance. Something more is required for a proper, intelligent citizenship.

"There are ordinary pursuits of social life which every child must be engaged in when leaving the public schools. The young girls will be called upon to attend to all the various duties of the household, and this demands information and intelligence indispensable to their welfare and that of others. Household economy, embracing the nature and kinds of marketable foods, with the proper methods of their preservation and of their preparation for the table—a knowledge of textile fabrics and their construction into garments and decorations—the handling of the needle and sewing-machine, and information and practice referring to all that must ordinarily challenge a prudent and intelligent housewife—all this is as important to them as a knowledge of political economy; and so far as it can receive the attention of our schools, in addition to what is done at home, it should do so. It is of right a matter belonging to common school education; for public schools cannot separate themselves from the common life of our communities, and apply themselves solely to an academic culture which finds its worth in itself, which is its own end, strengthening all the powers of personal life without any direct reference to their application and use.

"So also as regards the boys. Many of them, it is hoped, may be able when leaving our common schools to go on for years in the way of advanced education, becoming learned men, whether as skillful engineers or master mechanics, or lawyers, physicians, clergymen, etc., etc. But most of them will be denied the privilege of such opportunities. Hence the greater necessity that they gain some general, but definite, knowledge of the very things with which they must come in daily contact.

"The different kinds of soil, and their value for agriculture, and the proper treatment of the same; the different varieties of timber which our forests yield and the methods of their preparation for market; the handling of the ordinary tools which workers in wood and metals use, and the keeping of them in proper repair; all this enters into an efficient system of public instruction. This is part of a boy's household economy. Every day of his life he will be challenged to use his hands. Plans and models must be constructed with the pencil, demanding both freehand and mechanical drawing. Structures must be changed or repaired, demanding a facile use of hammer, plane, saw, and chisel. But why enumerate?

"Manual training, including industrial education, aside from its strictly pedagogic value which rests on gaining the power of expressing intelligent will through the hand and the eye, has such ends in view, and properly demands attention in a thorough and efficient system of public schools.

"Will—the cause—wherein rests all power of self-determination and purpose, through intelligence—the means—giving proper investiture to the will, goes into effect in act, or representation, or word. This whole process belongs to the work of education. Language through the tongue intelligently directed to express the purpose of the will; art through which a kindred expression can be gained through the hand and eye, governed by intelligence and facilitated; intelligent action wherein the deed itself is made possible and easy by the very practice, all come into the scope of public instruction, and give a legitimate, logical ground for what is called manual training and industrial education, as a part of public instruction.

"It is a misunderstanding, however, to suppose that manual training in our public schools is to address itself to trades, making expert carpenters and wheelwrights, etc., etc. This we regard as unnecessary and impossible, and quite beyond the scope of common schools. On the contrary, manual training is but carrying into proper effect the principle which Comenius, in his 'Orbis Pictus,' so earnestly insisted upon, viz.: that the teaching of words and things must go together,—that practical application must accompany every advance in knowledge to give it firm and full lodgment within the mind. This principle has most naturally given us the kindergarten, and in its further advance, emphasized the necessity of using the hand and eye as most important factors in the whole process of education."

THE SCHOOL ROOM.

Oct. 11.—EARTH AND NUMBERS.
Oct. 18.—SELF AND PEOPLE.
Oct. 25.—DOING AND ETHICS.
Nov. 1.—LANGUAGE AND THINGS.

HISTORY AND GEOGRAPHY.

History and geography should be taught together, as soon as the map can be understood—but not before. It is useless to put the finger on the map of New England, at Plymouth bay and say, "Here the Pilgrims landed." They didn't land on a map. What foolishness, and yet how many teachers are guilty of just such folly. It is a detriment to after work to attempt to teach the map unless it can be understood. This is an axiom as easy as that "the whole is made up of the sum of all its parts."

As soon as the map can be interpreted as a reproductive picture of a portion of the earth's surface, then proceed in the following manner:

1. Tell a story of, for example, the "Landing of the Pilgrims," the "Settlement of Jamestown," "The Battle of Bunker Hill," or "The Battle of Gettysburg." Let it be reproduced both orally and in writing. Now open the map and let the pupils point out where the event occurred. Show its relation to other places. If the story is the "Battle of Gettysburg," it should be shown where Lee started, where he crossed the Potomac, up what valley he marched, and for what purpose. Show the relation of this valley to Harrisburg, Philadelphia, Baltimore, and Washington. What were Lee's intentions? Why did the battle of Gettysburg take place where it did? Now show the relation of Seminary Ridge to Cemetery Ridge, Culp's Hill, and Little and Big Round Top. Show how much advantage the Union forces had over the Confederate, and show why Lee made a mistake in arranging battle at that place. Then ask, Do you think Lee intended to fight the battle where he did? and ask, Why?

We use this battle as a typical example. Any other would do as well, if properly taught, but *one event must be made as vivid as possible*. Talk about it, read about it, do all that can be done to create an indelible impression of it upon the mind. The careful molding of a map would be an excellent thing; in fact, anything that the pupils can do to fix minute and accurate information in their minds is essential to their highest success. Far more history would be taught; and far more geography also, if the two were carefully united. The following topics are excellent, provided each one receives sufficient attention to fix its facts clearly and distinctly in the minds of learners in the way mentioned:

- The Battle of Marathon.
- The taking of Jerusalem by Titus.
- The Battle of Waterloo.
- The Surrender of Cornwallis at Yorktown.
- The Surrender of Lee to Grant.

Around each of these events cluster most important effects. Ask such questions as these concerning Marathon:

Where is Marathon?
What is the geographical relation of Greece to Syria and Egypt? How was this relation of immense importance before deep sea navigation was perfected?

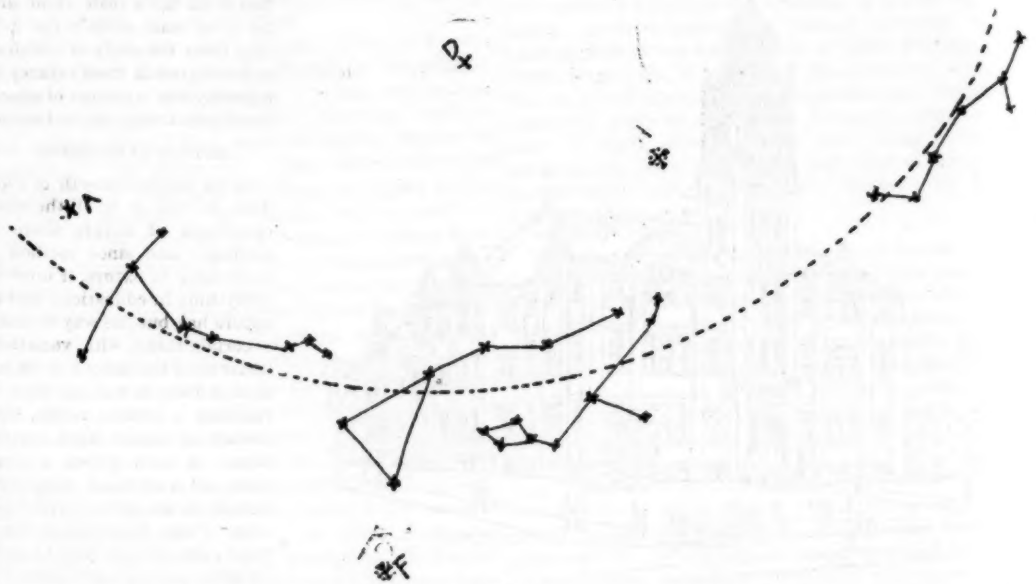
Where was Xerxes' home, and what did he want? Who was Cyrus the Great, and what did he do?

Describe the battle of Thermopylae, and show its effects?

What effect did the defeat of Xerxes have upon Greece? What effect would his success have had?

The answers to these questions assume knowledge, and all successful teaching not only assumes, but requires knowledge. The recitation of the words of the book is not history. The times, places, events, *all* must pass in review before the learner as though upon a stage. We must see the men, the boats, the plains, the mountains, and the passes through them. *They must be seen*. So it comes that without geography, history is meaningless, and without the history of the life of man and his actions, geography is meaningless. Everything in both geography and history revolves around *what man has done*. He is the central figure in all we do that concerns the earth and its modifications.

The following fact is a good one for the geography class: Dr. John C. Berry, of Bath, Me., who is in Asia, recently mailed a letter and a postal card on the same day to a citizen of Bath, sending one westward, via St. Petersburg, and the other eastward, via San Francisco. They reached their destination in the same mail. What routes did each take?



LESSONS ON THE STARS.

FOR OCTOBER 15.

Look south at eight or nine o'clock at night, and you will see Aquarius—note the *triangle*. The constellation Capricornus, is near by. Capricornus means a goat. Just west is Sagittarius which is more like a cup upside down with a handle to it than anything else. There are many bright first-magnitude stars in sight. At the southeast is Fomalhaut. Going up north of Capricornus you will first see Altair, then Vega (in the Lyre). This star is nearly overhead. East of Vega is Deneb. West of Vega is Gemma; a little farther west is Arcturus, but it is so close to the horizon that you may not see it. The Pleiades are just rising in the east. Near them is Algal.

A great deal has been done when one can fix the position and appearance of the Zodiac, constellations, and some of the stars of the first magnitude, and can readily recognize them. These articles are planned for those who want to know something of the heavens above them, and yet do not expect to know a great deal.

QUESTIONS ON SEPTEMBER LESSON.

Can you recognize Scorpio? What red star is in Scorpio? What planet is near this star? What constellation is between Scorpio and Capricornus? Can you recognize "the Dipper"? Spica? Arcturus? Altair? Vega?

Stars are of the first, second, etc., magnitude. There are 14 of the first magnitude to be seen by us: Arcturus, Antares, Altair, Aldebaran, Betelgeuse, Rigel, Fomalhaut, Capella, Pollux, Procyon, Sirius, Spica, Regulus and Vega.

No one can be a respectable astronomer who does not watch the stars himself. What time do any of these stars rise or set? (Mind this is to be from your own observation.) In what constellation is any planet?

Scorpio was in the south in July, Sagittarius in August, Capricornus in September and October; Aquarius in October also. Capricornus will be known by the little *square*; Aquarius by the *triangle*.

On the 20th of September the moon was in conjunction with Mars. This was seen by 50 millions of people in the United States. How many of them really understood what was happening in the heavens? Of the children above the primary classes how many understood the phenomenon? Of the teachers how many saw it and understood it? It is a sign of a genuine school when a pupil comes in, in the morning, and says to her teacher, "Oh, my, was not that a beautiful sight in the heavens last night!"

It is a bad sign when the children are inattentive to the changes that are going on about them, no matter if they can spell well.

The teacher should have a stick put up somewhere, so as to call the attention of the pupils to its shadow at noon. If he cannot do that, let him mark with ink on the floor where the shadow of the bottom line of the window strikes the floor at noon. Let this line be carefully watched. June 21 it was as far south as it could go—it will creep up north on the floor until Dec. 21; then it will go south again.

There are school-rooms where this phenomenon is

watched day by day. Those teachers who succeed in drawing the attention of their pupils to the phenomena of nature have done a grand work. Such pupils will study; they are apt to learn; they are never troublesome, rarely tardy or absent. Do you do this in your school?

A GEOGRAPHY EXCURSION.

By A. F. W.

I announced on Monday morning that I would give the school a half-holiday on the following Friday, closing school at noon. In order to spend the time profitably, I told them we would make what I would call a "geography excursion"; that is, we would make observations with special reference to what we had been studying in the class. They were delighted and looked forward to the trip with great pleasure. As the school house was situated in a country place near the bank of a small river I had no fear that we would not find interesting things enough on our trip.

As luck would have it, it had rained quite hard on the previous night and the streams were in a favorable condition for my purpose.

"How muddy this creek is that empties into the river!" remarked one of the pupils.

"What makes it so?" I asked.

"I know," said another. "The water carries fine bits of earth with it that gives it this yellow color. The water is something the color of that clay-bank over there. I know it is earth that gives it this color, for father once took a pail of water out of the brook after a storm. The horses wouldn't drink it, but after it had stood for awhile I could scrape mud out of the bottom."

I praised the pupil for using his eyes to such good advantage, and then explained how streams were continually carrying matter down towards their mouths. After a rain there is more of it than usual, and hence the fact is more noticeable. Water is both a tearer down and a builder up. It takes earth and sometimes stones from one place and deposits them in another.

"What can you tell me about the current of this stream?"

"I see that it seems to set strongly toward the opposite shore."

"Yes, and it has dug out a cove over there. Notice how it has made a hole underneath that high bank, a large portion of which will soon cave into the stream. But what do you see where the creek empties into the river?"

"I have noticed that at low water there are several sand bars at the mouth of the creek," said one of the older boys. "Now you can see only one of them."

"Do you know how they came there?"

"I suppose the mud and sand was brought there by the water."

"Very true. You remember how the maps represent the mouths of the rivers Nile and Mississippi. These rivers are there cut up into several streams flowing between low islands. The geographical term for it is a 'delta.' The waters of these large rivers carry a great deal of matter with them that is deposited near the mouth. Now what would you call one of these patches of ground?"

"An island," said several in unison.

"And this point of land on this side is a cape," said a little girl overjoyed at the discovery.

"Do you think these islands and this cape will always remain as they are?"

"No, because the water may wear away certain parts and add to other parts."

Then the important lesson we have learned this afternoon is that water has a great deal to do in changing the form of the land. I want you to observe how water changes the land around your home. Search the newspapers also for items regarding the action of water.

A few days after one pupil told me that the heavy rain storm of the night before had cut a deep gully by the side of the road. Another showed me a clipping from a newspaper telling about a landslide caused by a swollen mountain stream. Another brought a glass of water showing the sediment that had collected in the bottom. I found that the result of our trip was a greatly increased interest in the study of geography.

COUNTING AND READING NUMBERS.

It is important that pupils should learn to read numbers correctly and rapidly, and they can do this in the same way they learn to read and write words and sentences. In reading, as soon as the word HORSE is shown, the name is given, without spelling h-o-r-s-e. The form is instantly recognized and named, just as we recognize the sign + and say "plus," or \times and say "multiply." In the same way we recognize a sentence when it is not so long that the eye cannot take in the whole of it at a glance. For example, the child sees at once

The dog barks,

and reads instantly, without spelling at all. In this way a Chinaman can learn to read English without either knowing the names or forms of English letters. To him the character

The

is a new expression; or, we might say, a new Chinese letter, for in his language every character represents a word. So much for the philosophy; now for its application.

The child has learned how to pronounce the character 2; now he learns that 1 or 1, 1, also mean the same.

1

Here he has three characters all pronounced two. Next

1

he learns how to pronounce 3. 1; 1, 1; and 2+1.

Here are four characters. He must first have learned what three is, and be able to tell that, "one horse, and one horse, and one horse make three horses;" and that "two horses and one horse make three horses;" in other words, he must know three before he learns to read the characters representing three. The pupil in learning to read must not be permitted to spell, either in reading words or figures. As he does not say "d-o-g, dog," so he must not say "one and one and one are three," after he knows it, but pronounce instantly three, as soon as he sees the character.

How can this be done? By cards on which the mathematical words are written. Each card should be large enough to be seen by the entire class, and the characters clearly written in black letters on a white surface, thus:

2+1	$\frac{2}{1}$	2, 1	1, 1, 1	1+1+1
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All of these forms are necessary, in order to accustom the eye to the seeing of them. The object of the work is to accustom the mind to the reading, so that when the pupil sees 2+1 he will not stop and think "2 and one are 3." He must say three without thinking, just as the fingers write the word "notwithstanding," without thought as to its spelling. This is done by what is often called, for want of a better expression, "the automatic action of the brain." It will be seen that a large number of cards must be prepared—as many as three or four hundred—on which would be placed all sorts of combinations of the nine digits and their combinations. It would take too much space to give all of these; it is not necessary, only a few as samples:

3, 2;	$\frac{3}{2}$;	3+2;	4, 4;	$\frac{4}{4}$;	4+4;
9, 8;	$\frac{9}{8}$;	9+8;	8, 7;	$\frac{8}{7}$;	8+7;

etc., etc.

In adding a column of figures, how do we read? By twos, threes, or fours? Here is an example. Let us see

4 how it is added. The pupil sees 4 and says seven; next

7 he sees in his mind's eye, 9 and says sixteen. So far,

9 so well, but what next? Must he now think 16 and say

25? Most teachers will say yes; we say no.

Our experience has taught us that it is better to use a

pencil and make a mark, thus, 1, and think of 6 and

say thirteen. Then make another mark, 1, and think

again 3 and say nine; then 9 and say sixteen; then

another tally, 1, and think 6 and say fourteen; and

another tally, 1, then think again 4 and say eight. An

instant glance will show four tallies and the answer 48 is

given. The other way, viz.: of saying seven, sixteen,

twenty-three, twenty-nine, thirty-five, forty-four, forty-

eight, is certain to give rise to counting, unless a great

number of combinations are used. The experience of

others may be different from ours, but we have found the

method we have mentioned the best, especially in the

lower grades. For higher grades the other plan often

succeeds, but in an experience of many years we have

found very few high-school pupils who were able to add

a long column of figures without counting. Try your

older pupils, teachers, and see what your result is.

Two hints:

1. Never give a column of figures to be added unless

the art of reading combinations has been learned. For ex-

ample, some teachers say, "Now we will have an exercise

in addition," addressing those who have never learned to

add. It would be just as sensible to require an exercise

in reading, of those who have never learned to read, ex-

cept by the old method of spelling out the letters.

2. Commence practice in reading figures as soon as the

meaning of their combinations is understood, but do not

begin before. Early and constant practice is essential

to success in this work.

FRACTIONS BY OBJECTS.

1. Measuring.

Using a common two-foot rule measure the length and breadth of the school-room, carefully. We will suppose it is found to be 22½ feet long, by 16½ feet wide or 273 inches long and 198 broad. In the same way measure the length and breadth of a school desk, of the nearest house, and with a yard-stick, the school lot. The habit of actually measuring is of great importance in early work in fractions.

2. Weighing.

Every school-room should have facilities for actual weights. Use a small stone; it is found to weigh 1 lb. 4 oz. Another stone is found to weigh 3 lbs. 8 oz. Here we have a combined weight of 4 lbs. 12 oz. or 8½ lbs. This exercise can be indefinitely extended with great profit to beginners in fractions.

3. Miscellaneous questions.

Suppose the teacher ask at the close of the school on Wednesday noon, what part of this week has now passed? John is 12 years old, if he lives to be 70 how much of his life has passed? A man owes \$125, and has \$12½, what part of his debt must remain unpaid? These are samples of such questions as may be proposed, leading pupils to become familiar with the working out of examples containing fractional quantities. The following principles should be followed:

Use a measure of known length, at first, in order to measure an unknown length.

Next use a measure of unknown length to measure a known distance.

Next make problems with two terms known and one unknown. Examples:

\$120 buys one house; I have \$600, how many houses can I buy? You have 70 cents; a morning paper costs 4 cents, how many papers can you buy?

Then make problems in which something will be left, as: A cow costs \$40. I have \$100; how many cows can I buy?

In doing this work it is necessary that actual objects should be used, or that the problems should be such as will strongly appeal to the senses and experience of the learners. Keep within the limits of the known in going to the unknown. In following out this principle the operations of adding, subtracting, multiplying, and dividing fractions can be taught.

Adding.

Let some pupil prepare a pile of small pine sticks of equal size, 5 inches long. Taking two, the teacher says:

How many sticks have I taken? Breaking each into two equal parts, he says: How many have I now? Holding up one of the parts, he says: What part of one stick is this? How many halves have I? How many whole sticks did I take? He gets the statement, Four halves = two whole ones. The same course can be pursued with 1's, 1's, 1's, 1's, etc., until the pupils are thoroughly familiar with fractional additions, and separations.

He now takes five sticks, and breaks each one into four equal parts. The pupils count and measure. He next takes eight of these pieces, asking, what part of the whole five sticks are these eight pieces? What part of 1 stick is one of these pieces? Show me ½ of 5, ⅓ of 5, etc., etc. If the work has been thoroughly done there will be no hesitancy, and they will be able at once to show by sticks the correctness of their answers.

In the same manner take 6 sticks and break each into five parts, and pursue the same course as outlined above. Other subdivisions can be made, and an almost infinite number of problems proposed. It is wonderful how much interest is excited by the use of things that can be handled, seen, felt, and tasted. We urge all teachers who have not done so, to try the experiment for themselves.

How can we show that ½ = 1? Take one stick, break it into two equal parts. How many halves have we? Two halves is the reply. Then put the form on the board, ½, which will equal one stick.

Next how can we show that 1 divided by ½ = 2? How many halves are there in 1? Show that the expression 1 ÷ ½ = 2, means that there are 2 ½'s in 1. Show how we can express ½ ÷ ½. Take the two halves of a stick and lay them on the table. Then take another stick and break it into three equal parts, and lay these parts by the side of the first stick, divided into two parts. It will be readily seen that in ½ there is one ¼ and ½ of another ¼. The expression ½ ÷ ¼ = 1½ will now be readily comprehended. Other examples of the same kind can be illustrated in like manner as ½ ÷ ½ = 1; ¾ ÷ ¼ = 3; ¾ ÷ ½ = 1½; 1½ ÷ ¾ = 2; etc., etc. It is far better, in our opinion to use sticks than marks on the board or on paper. Division of fractions is not taught in a great many schools, for saying, "Invert the terms of the divisor and proceed as in multiplication," is neither teaching nor telling, but using words, which in almost all cases mean nothing more than a rule, without sense, an obstruction to knowledge.

Multiplication of fractions can be clearly shown in the same general manner as division, addition, and subtraction. Round pieces of paper are preferred by some teachers, rather than sticks. Our practice has been to use sticks, but each teacher must suit himself. The expression "multiplication of fractions," has been criticised, and as we believe justly, but let that pass. With objects it can easily be shown that ½ of ½ = ¼, and that ½ of ¼ = ⅛. The sign (\times) should be introduced after, not before, the processes are taught. Then the pupils will understand what it is proposed to do.

Now what general principles must be followed in teaching this subject. Evidently first of all this one: Observation is the absolute basis of all concrete knowledge.

No philosopher has ever contradicted this law, for it is drawn from the knowledge of the mind's operations. We get and we give through the senses. How else can we get, or give. Let the question of "innate ideas" have a rest, and let us try to think of anything, the starting notion of which did not originate through the senses. What idea does the child get who in answer to the question, "How do we divide one fraction by another fraction?" says: "Invert the terms of the divisor and proceed as in multiplication?" Of course the pupil states, in general, a correct method of working, but what has he learned? Nothing; absolutely nothing but words, words. But is it necessary to prove every operation in fractions by sticks or pieces of paper? Not at all. It would be difficult to show by objects the result of ⅓ × ⅓. It is not necessary this should be done. But it is necessary that the principle should be understood, and a short example like this: ⅓ × ⅓, or even ⅓ × ⅓, is sufficient. But let the teacher beware lest an illustrative example should be learned by heart, and so the seeming explanation become nothing more than words, words.

Another principle of fundamental importance is this: Never tell a child what he can find out for himself.

Are there no exceptions to this rule? There may be in practice, many, but, notwithstanding, the principle remains. A pupil can find out for himself the reason of all the operations in fractions, so he should never be told. In the school-room we are after mental strength, and moral character. It is of no importance whatever to stuff a human brain as though it were a sausage. Cramming has had its day. Let it rest in peace. We have come to better times. But in no part of arithmetic are the evil effects of cramming so detrimental as in fractions. Here intelligence is necessary, or algebra can not be understood, and geometry will become a dead and senseless thing.

We ought to say, before we close this article, that the thorough understanding of fractions is the key that will unlock all mathematics. Drill on fractions. Don't let up. Use objects, and keep at it. It will pay.

Attendance Record for Term Beginning 189 Ending 189
 Town of _____ Grade. District No. _____ Teacher. _____

✓ Present.
 ○ Absent.
 • Tardy.
 X Half-day Absent

1		NAME										Total For Term	
M		T		M		T		M		T		M	
T		W		M		T		M		T		M	
W		T		M		T		M		T		M	
F		F		M		T		M		T		M	
Total		57										57	
2		NAME											
M		T		M		T		M		T		M	
T		W		M		T		M		T		M	
W		T		M		T		M		T		M	
F		F		M		T		M		T		M	
TOTAL													
3													
M		T		M		T		M		T		M	
T		W		M		T		M		T		M	
W		T		M		T		M		T		M	
F		F		M		T		M		T		M	
TOTAL													
4													
M		T		M		T		M		T		M	
T		W		M		T		M		T		M	
W		T		M		T		M		T		M	
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TOTAL													
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M		T		M		T		M		T		M	
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W		T		M		T		M		T		M	
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T		W		M		T		M		T		M	
W		T		M		T		M		T		M	
F		F		M		T		M		T		M	
7													
M		T		M		T		M		T		M	
T		W		M		T		M		T		M	
W		T		M		T		M		T		M	
F		F		M		T		M		T		M	
8													
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T		W		M		T		M		T		M	
W		T		M		T		M		T		M	
F		F		M		T		M		T		M	
9													
M		T		M		T		M		T		M	
T		W		M		T		M		T		M	
W		T		M		T		M		T		M	
F		F		M		T		M		T		M	
I		57		II		TOTAL		IV		V		VI	
												57	

SOME OF THE ADVANTAGES OF THIS REPORT CARD.

1. It dispenses with roll-call.
2. It does away with cumbersome roll books in general use.
3. It is handy both for use and reference.
4. The record of each pupil is separate and concise.
5. It saves time.
6. Used in marking attendance or scholarship in recitation room, it promotes acquaintance with pupils; for when a teacher meets several large classes, it becomes almost impossible to know each one by name, but with this diagram for reference, it is an easy matter.

DIRECTIONS FOR USE.

The whole represents the diagram of a school-room with 54 seats (more or less can be used), each pupil's name in his own seat; looking over the room, a teacher can readily note a vacant seat. Mark the absences in the proper week, opposite the day of the week (1st week's attendance in 1st vertical column, etc.); add each week's attendance, and place result underneath. At end of term add horizontally, then add vertically these results, placing whole attendance of each individual in lower right space. Then add both horizontally and vertically the totals of all the pupils and place result at lower right of diagram. If the report is correct the vertical and hori-

zontal results will balance. The system of marking shown in diagram may be used; it may however, be found convenient to leave a blank space to note presence, using other marks to show absence. This latter method is shorter.

FOR THE GEOGRAPHY CLASS.

GREENLAND'S SURFACE.

The fact that Greenland's snow and ice fields are only slightly undulated, gave rise to the belief that the land was a uniform plateau. It is thought now that the rocky surface of the land is, on the contrary, carved into mountains and hills, valleys and gorges, but that the plastic snows and ice have gradually filled up all the cavities. The ice flows like asphalt or tar with extreme slowness seaward, while the surface is gradually leveled by the snow falling during the course of ages, and distributed by the winds. In the interior of the country the surface of the ice and snow is as smooth as if it were polished, looking like "the undisturbed surface of a frozen ocean, the long but not high billows of which, rolling from east to west, are not easily distinguishable to the eye."

EXPLORING GREENLAND'S COAST.

Lieut. Ryder, of the Danish navy, expects to start

next spring on a two years' trip to Greenland. He has already visited the west coast of that country, and will this time explore the east coast, between 66 and 73 degrees. A portion of this coast between Franz Josef fiord and Cape Brewster has been partially explored. The second and southern stretch lies between Cape Brewster and Angmagssalik in about 66 degrees north latitude, where Captain Holm spent the winter of 1884-85. The Eskimos who, as is well known, have some skill in map-making, have carved on bits of driftwood the outline of a part of this coast, and these rude maps, together with the information the natives gave him, enabled Captain Holm to make a sketch map of the coast from 66 to 68 degrees north latitude. How nearly it approaches accuracy it is, of course, impossible to say. Lieut. Ryder will carry provisions for two years, and will be equipped with three boats, twenty-two feet long and six feet wide, and an ample supply of sleds, tents, snowshoes, and so on, besides material for a house and an observatory. It is an interesting question whether the party will meet any natives along the strip of coast north of Cape Stewart, which they hope to explore next summer. Lieut. Ryder thinks it possible that an isolated branch of the Eskimo family may still be living there, completely cut off from the more southerly natives, just as the Eskimos of Cape York are separated from their brethren of southern Greenland by the glaciers of Melville bay.

OUR TIMES.

IMPORTANT EVENTS, DISCOVERIES, ETC.

NEWS SUMMARY.

OCTOBER 1.—Adjournment of congress.—A carpet trust formed.—The German emperor visits Austria.—Gen. Wolseley assumes command of the troops in Ireland.—Michael Davitt reveals the dynamite plots.—At the United States navy department bids are opened for three new battle ships.

OCTOBER 2.—Jefferson Davis' war papers and correspondence go to the Louisiana historical association.—An international iron and steel congress held in New York.

OCTOBER 3.—The son-in-law of Gen. Barrundia, who was killed on a United States vessel, threatens to sue our government for damages.

OCTOBER 4.—A great increase of imports to save payment of extra duties.—Death of Mrs. Booth, wife of the commander of the Salvation army.

OCTOBER 5.—The revolutionary party in the canton of Ticino in Switzerland wins a victory on the question of the revision of the constitution.

A FOOD EXHIBIT.

Secretary Rusk has suggested to the World's fair commissioners that a building be devoted to a food exhibit. He would group together the products of the farm, the garden, the orchard, the mill; the establishment for canning, that for meat packing, the factory, the bakery, the domestic kitchen—in short, all substances used for food, with illustrations of the methods of preparing them for market, and for eating. The best teachings of chemistry, physiology, and hygiene regarding foods and beverages could be presented to the people by labels, models, specimens, and books. The hall might be surrounded by a fringe of separate apartments, in which could be schools of practical cookery, model kitchens, bakeries, and markets.

TO TUNNEL UNDER NEW YORK BAY.

A scheme is on foot to connect Staten Island and Long Island by a tunnel under the bay at the narrowest part. A bill authorizing the work was recently introduced into congress. The route is six miles long. It has been surveyed, and a part of the right of way already has been purchased. The water is only thirty-five feet deep at the deepest spot, so that the tunnel need not be greatly depressed. The material nearly all the way is believed to be hard soapstone, which is easily worked, but very strong, and will not require much artificial support.

FEDERAL OWNERSHIP OF RAILWAYS.

The recent strikes have revived the question of federal ownership of railways. It is held that railways as they are run at present cause a large and unnecessary loss of life of employes, passengers, and travelers. On the other hand, it is asserted that the improvements required for safety would require an enormous expenditure. For instance, improved couplers and air brakes on the million freight and work cars in the United States would cost \$80,000,000. English railways have no grade crossings. Accidents could also be prevented here by carrying the railroad over or under the street; but our railways cost \$60,000 a mile, while those in England cost three or four times as much. It is clear, then, that if the government should take the management of the railways, it would have to spend a vast amount above the receipts on many of them, to put them in what would be considered proper condition.

POWDER WORKS EXPLODE.—The Du Pont powder works near Wilmington, Del., exploded. The village of Rockland was wrecked. Many people who were in the works were killed. The report was heard in Philadelphia and Trenton. In the war of 1812 these works furnished the sole supply for the American army. Of what substances is powder composed?

PORTUGAL MUST SETTLE.—England has asked the Portuguese government to settle its claim for indemnity for the seizure of the British African Lakes Company's steamer, which was captured by Lieut. Azevedo Coutinho a few months ago.

A COMET DISCOVERED.—A faint comet was discovered by Prof. E. F. Barnard, at the Lick observatory at 8 o'clock 46 minutes on a recent evening. Its position was right ascension, 19 hours 12 minutes, 26 degrees south, motion easterly.

A PANIC IN BUENOS AYRES.—A panic was caused on Oct. 6, by a report that a fresh revolution had broken out. The troops were called out and detachments of cavalry patrolled the streets during the night. Why was Argentine's president deposed recently?

CHEAPER POSTAGE.—The recent visit to the United States of J. Hennipfer Heaton, a member of the British house of commons, was to arrange for the reduction of the postage rates between Great Britain and Ireland and the United States. He pointed out the fact that the postage rate in

the United States to Alaska and all parts of Canada was only two cents, and that there would be no loss of revenue by the change, as it would mean an increase of trade. The arrangement proposed will probably be adopted.

PORTUGAL'S NEW CABINET.—A new cabinet has been formed in Portugal with Senhor Martens Ferrao as premier. What is a cabinet? Who is now the ruler in Spain?

ROYAL VISITORS.—Louis Philippe Albert, Comte de Paris, chief of the royal house of France, and his eldest son, Louis Philippe Robert, Duc d'Orleans, arrived in New York Oct. 3. They were welcomed by a special committee (on account of the Comte de Paris' services during the war for the Union), among whom were Gens. Butterfield, Fitz John Porter, Keyes, Slocum, Newton, Howard, Franklin, Sickles, and Parke. What were the Comte de Paris' services in the war for the Union?

FIRE IN SYDNEY.—A large area in the city of Sydney was burned over. The loss is estimated at \$7,000,000. Tell about a modern fire department?

SENDING JEWS TO PALESTINE.—A movement was started in New York to assist Russian Jews to migrate to Palestine. They believe that the ancient prophecy that the Jews will return to that land is about to be fulfilled. What has been the treatment of the Jews by different nations?

AUSTRIAN REFORMS.—The peasant proprietors of Austria lately held a conference in Vienna. Among the reforms demanded were freedom from taxation of homesteads, unrestrained sale of land, the adoption of a progressive income tax, abolition of customs taxes on necessities of life, lightening military burdens, nationalization of railways and a uniform rate throughout the empire, and sale of salt at cost prices. What is a peasant?

BANCROFT'S BIRTHDAY.—The venerable historian, George Bancroft, celebrated his ninetieth birthday at his home, Oct. 3. What works has Mr. Bancroft written?

MONEY FOR AFRICA.—The German East African company has just coined a new lot of metal money for the German colonies. The silver pieces are of about the size and value of an Austrian gulden, approximately forty cents. The coat of arms consists of a lion and a bust of the German emperor. The copper coins are worth about 1-3 cents each. Italy has also coined money for her African possessions. What is money?

EMIGRATION FROM RUSSIA.—The emigration to Brazil from the government of Lodz is becoming alarming. Not only the laborers, but even well-to-do mechanics who have established shops of their own, tailors, cobblers, carpenters, locksmiths, etc., are selling out and leaving. When did Brazil change its form of government and why?

FLOODS IN RUSSIA.—Cronstadt and St. Petersburg have of late suffered greatly from inundations. In the former place the sea rose to a height never before known and destroyed many vessels in the harbor and nearly a third of the city.

GEN. DURYEE'S DEATH.—The death of Gen. Abram Duryee, formerly commander of the Seventh New York regiment and the organizer of the Duryee zouaves, occurred recently in New York.

A SCHOONER CONFISCATED.—The schooner *Davy Crockett* of Gloucester was seized at Louris, P. E. I. It is said that besides her seine, she was fitted out with dories, so that if she failed to get fish in the seine she could send dories inside the limit and pick up fish while the schooner jogged about outside. What are the rules for foreign vessels fishing near Canadian shores?

GEN. EARLY HURT.—A few days ago Gen. Jubal A. Early was standing in front of a building in Lynchburg, Va., that was recently burned, when the wall fell, burying him in a mass of debris. He was not seriously hurt. Sketch Gen. Early's career.

PEARL FISHERS KILLED.—The crew of a vessel belonging in Hartlepool while fishing for pearls off the coast of New Guinea were killed by the natives. Describe pearl fishing.

A SUIT AGAINST A TRUST.—The United States has brought suit at Nashville for an injunction against a coal trust. The defendants are fourteen dealers and fourteen companies. They are charged with combining in order that the prices for coal for the local market might be agreed upon and the trade thereby controlled. The proposed action is authorized by officials at Washington, and is the first to be taken under the provisions of the national law against trusts. What is a trust?

OKLAHOMA.—The cattle men were granted two months' more time (to Dec. 1) to remove their live stock from the Cherokee Outlet. The government wants the tract, as it gives better ingress and egress for the new territory of Oklahoma.

OF SPECIAL INTEREST TO PUPILS.

NEWSPAPERS.—The number of newspapers published in the world is 41,000, 24,000 appearing in Europe. Germany has 5,500, France 4,100, England 4,000, Austria-Hungary 3,500, Italy 1,400, Spain 850, Russia 800, Switzerland 450, Belgium and Holland 300 each, Japan 300, Africa 200, Sandwich islands 3. In English 17,000 are printed, 7,500 in German, 6,800 in French, 1,800 in Spanish, and 1,500 in Italian.

LONDON BY NIGHT.—Twelve hours are not sufficient to supply the wants of nearly five million people, so many have to work at night. All the underground and district railways, and also the surface roads, cease running at midnight. Those who wish to travel after that must either walk or take a cab. Every saloon is closed at midnight on Saturday, which throws many of the rough element on the street. The rattle of the market gardeners' wagons and of the trucks loaded with merchandise, with perhaps that of the fire engines, make an indescribable din, during the early hours of the morning. The hospital corps are busy during the night, for crimes and accidents are of hourly occurrence, while the river police are constantly on the look-out to save would-be suicides from drowning.

AN ANCIENT WARSHIP.—While dredging operations were being carried on, a sunken warship was found at Santander, Spain. It had probably been there 400 years, and was partly covered by a deposit of sand and mud. Divers have brought up guns which bear the united arms of Castile and Aragon, the scroll of Isabella, or the crown and initial of Ferdinand. This ship would appear to have been employed as a transport, and, inasmuch as some of the arms are of French and Italian make, it is supposed that she formed part of the fortunate expedition against Naples, under Gonzalo de Cordoba.

A NEW SUBMARINE BOAT.—It was invented by an Italian and is spherical. By means of machinery in the interior it can be propelled, steered, sunk, or raised. It is fitted with lenses, by which those inside can guide their way and see sunken articles they wish to bring to the surface. For this purpose it has grapnels and hooks on the outside that can be managed from the inside.

THE CONGO RIVER.—According to Mr. Stanley, the Congo is more than 3,000 miles long; and in size and volume the second river of the world, the first being presumably, the Amazon. Like the Nile, the Congo has one stretch of navigation 1,000 miles long, between Stanley Pool and Stanley Falls. Unfortunately for commerce, however, the river is separated from the sea by a series of cataracts, that compel a portage of 235 miles, or two portages of 85 and 50 miles and many transfers.

A GIANT APPLE TREE.—The largest apple tree in New England, and probably in the world, is in the northwestern part of Cheshire, Conn. Its age can be traced by a family tradition to 140 years at least, and it may be twenty or twenty-five years older. It is, at the present time, of symmetrical shape; the trunk is nearly round, without a scar or blemish on it; there are eight large branches; five of them have been in the habit of bearing one year, and the remaining three the next. From the five branches 110 bushels of apples have been gathered. The tree measures 13 feet, 8 inches around, is 60 feet high, and the branches spread 100 feet.

NUMBERING COUNTRY HOUSES.—A. L. Bancroft, of San Francisco, has thought out a plan that seems to be practicable. Taking the chief city or town of a county as a central point, he proposes to name all of the roads leading from it, and all of the branch roads. Then he will divide each mile into ten imaginary blocks of 528 feet each, giving each block two numbers, the odd number on one side of the road, and the even number on the other. Should there be more than one house on a block, the first house would have the number of the block, the second the same number followed by the letter A, etc. By this arrangement the county directory would direct a person to any man's house in the county.

STEEL BOATS.—A novel industry is to be introduced into Leeds by the opening of an establishment for boat-making, on a patent system, which consists of the stamping out of a boat from a single plate of soft steel. Of course only small craft, such as rowing boats and steam launches, can be made by this process.

WOOD THAT SINKS IN WATER.—There are four hundred and thirteen species of trees to be found within the limits of the United States, sixteen of which, when perfectly seasoned, will sink in water. The heaviest of these is the black ironwood, found only in southern Florida, which is more than thirty per cent. heavier than water. Of the other fifteen, the best known is the lignum vitae, and the mangrove. All the species heavier than water belong to tropical Florida or in the arid West or Southwest.

CORRESPONDENCE.

Correspondence is welcomed, provided that it is written upon one side of the paper only, and is signed with real name and address. Many questions remain over until next week.

MONTEITH AS A TEXT-BOOK AUTHOR.

Next to Noah Webster, probably no other man associated with the authorship of text-books has been so widely known as the late James Monteith. For nearly thirty years his name has been a household word, and probably ten million children have studied his books. Professor Monteith's connection with school geographies was the result of accident rather than design. Years ago at a meeting of a number of teachers in this city, the question of school geographies was under discussion, and it seemed to be the opinion that there was no book that met the demands of a growing system of education. One of the teachers present, I think Dr. Finch, now a practicing physician of New York, jumped to his feet with the exclamation, "We can overcome this difficulty, and there," pointing to Monteith, "is the man that can help us." Monteith was loth to accept such a responsibility, but after considerable persuasion undertook the work. When the manuscript was completed the more trying problem of securing a publisher presented itself. One house offered \$350 for the manuscript with all rights, but it is hardly necessary to add that the offer was not accepted. Another firm kept the copy for several months and then rejected it. A third house, A. S. Barnes & Co., accepted it under condition that the author should advance the cost of cuts, maps, and composition, agreeing to pay a royalty after the cost of the first edition had been covered by the sales. This offer was accepted, and within three days both of the other firms wrote to Monteith signifying their willingness to take the book. Monteith put all his capital into the venture, his father advanced him \$1000, in addition, and after overcoming a host of difficulties the book was published. To say that it was a great success would be expressing it very mildly. It laid the foundation of his own fortune, and it made that of his publishers. The text was simple, plain, and unpretentious; indeed it reflected the very character of the author himself. It requires a special ability to make a successful text-book that at the same time shall be a good one. Professor Monteith possessed this ability in a remarkable degree. Quick to see, decisive to act, and untiring in his zeal, he was a leader in his professional work whom others followed. The kind and sympathetic nature that characterized the man, in a way pervaded his books, and the latter will be a monument that will endure long after the headstone at his grave shall have crumbled to dust. J. W. REDWAY.

A VOICE FROM WISCONSIN.

The question of compulsory education in this state is now being agitated with great interest, and has caused the two great parties in that state to take a stand on this important question. The agitation is the result of the passage by the state legislature in the year 1889 of a law called the Bennett school law. The object of the law is twofold—compulsory education, and the prohibition of children under certain ages from being employed in factories, etc.

The opposition to the law is founded on its provisions on compulsory education. It provides that reading, writing, arithmetic, and United States history must be taught in the English language in all schools that wish to be recognized as such, and that every child between the ages of seven and fourteen must attend such school for a term of twelve weeks at least, the school board to fix the term of going. It was on this particular provision that the opposition was at first founded. They claimed that an affront had been made to the foreign-speaking element in the state. Also that too much power was placed in the hands of the school boards, these being able, it is said, to use personal prejudices in fixing the term that a child shall be obliged to attend school. The narrow-mindedness of this claim was soon proven and it was dropped, for the enforcement and obeying of the law is obligatory on all.

It was claimed then that it was intended to do away with the parochial schools. The foolishness of this claim, centered in the provision above mentioned, is at once made apparent by an examination of the law.

But there certainly is something in the claim that too much power is placed in the hands of the boards, for there is no provision that certain excuses mentioned in the law must be accepted by the board; it says when it is "shown to their satisfaction," etc. But even this evil will be remedied by the common law of right of appeal, and the right of trial by jury.

Many other minor claims have been raised by the opposition, such as "an insult to Germans," "expulsion of foreign languages," "unconstitutionality of the law," "non-enforcement," etc., etc.

This has already become an important question in the politics of this and some other states. The Republican party in its platform heartily endorses the law, and the Democratic party demands its unconditional repeal. It is evident that this question will cause a break in the ranks of both parties. It is quite plain that the state right to

pass compulsory educational laws, and the church claim that it cannot pass such laws, are pitted against each other. It will be a battle between the allies of the church and the lovers of the public schools. The Republican nominee for governor is Governor W. D. Hoard, and the Democratic nominee G. W. Peck, of Milwaukee. May the public schools triumph! OTTO ZANDER.

Mantlovoc.

Let me add one item to C. M. Woodward's correction to your statement about the Baltimore manual training school being the "pioneer" and only "absolutely free manual training school in this country." The Tidoute manual training school was organized in 1883, and is absolutely free, although not supported by public taxation. It is the gift of Mr. J. S. Grandin, a wealthy philanthropist of our town. R. S. CRAWFORD.

Tidoute, Pa.

Please give me a rule for the use of "shall" and "will." A. G. H.

"In the first person simply *Shall* foretells;
In *Will* a threat or else a promise dwells;
Shall in the second or the third doth threaten,
Will simply then foretells the future feat."

Name some works that would be helpful in suggesting simple home-made devices illustrating the principles of physics. F. E. S.

Read THE SCHOOL JOURNAL.

1. Would you punish a pupil by making him "stand on the floor?" 2. What is your opinion of reading a lesson backward? Fulton, Ky. L. S. S.

1. It must be conceded that there must be punishment where there is an infraction of law. There are a great many kinds of punishments that may be employed. The question is, what punishment best suits the case? Mr. Page discusses this with a good deal of ability in his work on teaching. There are two great classes—those which address themselves to the mind directly, and those which address the mind indirectly. If standing upon the floor is directed without intending to humiliate the person, and it is not made of so long duration as to be injurious, it may be occasionally employed. If the object is to bring the pupil into ridicule, the effect will be very bad. I take it for granted that the object is to separate the pupil from his companions, and show that you are not pleased with his conduct. Under these limitations given it may be employed. 2. The practice of reading a lesson backward cannot be defended either by common sense or science. It is a waste of time, and has a tendency to destroy the interest which a pupil may feel in his school.

Name the ten youngest cities of New York in the order in which they were chartered. A. C. G.

Watertown and Cohoes were chartered in 1860, Rome and Long Island City in 1870, Kingston in 1873, Dunkirk in 1880, Amsterdam in 1885, Jamestown in 1886, and Hornellsville, Ithaca, and Middletown in 1888. It is possible that this list may be imperfect, but hunting over the sessions laws for twenty years is not an easy task. J. W. R.

1. Who was the cardinal preceding Cardinal Gibbons? 2. Where and when will the next National Association be held? 3. Do the circuit and supreme justices preside over the same courts?

1. Cardinal McCloskey. 2. It has not yet been decided. 3. The whole country is divided into nine parts, in each of which is situated a circuit court. These circuits are again divided into districts, each with its own court. These courts have their own duties and their own judges, but in the circuit courts the supreme court justices assist the regular judges. The supreme court holds its sessions in Washington.

1. Is the Panama canal completed? 2. How are ship railways constructed? G. C.

1. No, and probably never will be. 2. The plan for the Tehuantepec ship-railway is to have pontoons that may be sunk to the necessary depth by admitting water to them, and raised by pumping it out. After the pontoon is sunk the vessel is to be run in, then lifted with the car on which it rests, and after that run off on the tracks. Several strong locomotives are to draw it to the end of the road, where it is to be lowered into the water. The railway has not yet been built.

1. Give a short biographical sketch of Henry Knox, Washington's first secretary of war. 2. Who composed Washington's second cabinet? 3. I have two young ladies in my school who try to say smart things, and then laugh and giggle about them. How shall I stop it? Ark. A. G. S.

1 and 2. Consult a history. 3. It will require tact, and that can not be taught by correspondence. You might look at them, without smiling, saying nothing and waiting in dead silence; or you might say, "That is cute, but don't disturb us now;" or—well, there are a great many things you might do. Try some of them.

If you decide to buy Hood's Sarsaparilla, do not be persuaded to take any other. 100 doses \$1.

EDUCATIONAL NOTES.

STATE ASSOCIATIONS FOR MID-WINTER, 1890 AND 1891.

[Will subscribers please aid us in making this list complete?]
Connecticut.—October 16-17-18 at New Haven. A. B. Field of New Haven, Pres't; S. P. Williams, Plainfield, Sec'y.

Illinois.—Dec. 29, at Springfield. P. R. Walker, Rockford, Pres't; J. M. Bowly, Litchfield, Sec'y.

Indiana.—Dec. 29, at Indianapolis. W. W. Parson of Terre Haute, Pres't; Anna M. Lemon, Bloomington, Sec'y.

Kansas.—Dec. 29, at Topeka. D. E. Sanders, Ft. Scott, Pres't S. D. Hoaglin, Holton, Sec'y.

Michigan.—Dec. 22 to 24 at Lansing. J. J. Plowman, White Pigeon, Pres't; D. A. Hammond, Charlotte, Sec'y.

Minnesota.—December.—L. C. Lord, Morehead, Pres't; Miss L. Leavens, Sec'y.

Nebraska.—Dec. 31 at Lincoln. Isaac Walker, Pembroke, Sec'y.

North Dakota.—Dec. 29, at Bismarck. M. A. Sherley, Pres't; W. M. House, Sec'y.

Rhode Island.—Oct. 23-24-25 at Providence. Rev. W. M. Ackley, Narragansett Pier, Pres't; P. A. Gay, Providence, Sec'y.

South Dakota.—Dec. 29, at Sioux Falls. H. E. Kratz, Vermillion, Pres't.

Vermont.—Oct. 23-24-25, Bellows Falls. E. H. Dutcher, Brandon, Pres't; W. E. Ranger, Londen, Sec'y.

Wisconsin.—December; L. D. Harvey, Oshkosh, Pres't; W. J. Desmond, Milwaukee, Sec'y.

Supt. E. P. Fogg, of Marshalltown, Ia., says in the *Iowa Teacher* that great results would come from a uniform basis of promotion and graduation in all schools; that if this uniformity became general, teachers in all countries would have uniform work and like aims. But Supt. Fogg would not maintain that uniformity of work is anything like as important as uniformity of spirit and life. There is much that is depressing in uniformity, and much that is inspiring in variety. It is a fact that we could make all of our studies so uniform that pupils going from one school would fit into the same place in another school; but this is not the kind of uniformity most to be desired. The individuality of the ordinary teacher must be preserved, and, in order to secure this important end, there must be a good deal of freedom. Uniformity will not prevent candidates from locating the optic nerve in the heel and the trachea in the stomach. It is not a specific that cures educational sins; on the other hand, it may be used, as it often has been used, as a blanket to cover up a vast amount of miserable work. The capable superintendent does not inquire, "How far have you gone in the arithmetic?" "How many pages have you read in the reader?" "How many dates can you recite in history?" but he is always searching after character and power; he notes the observation, attention, conception, reasoning, generalizing, and concluding power of the pupils. He is not searching after order, method, so much as interest, life, and, in fact, the effects that come from real teaching, and not the blind following of a course of study. It is only an incident in Supt. Fogg's article liable to be misapprehended.

The difficulty that some Brooklyn teachers are experiencing in dealing with the beautiful lines of Longfellow is real, and serves as a fine commentary on the grad-grind methods by which reading is taught, not alone in Brooklyn, but almost universally. Children can be trained in a love for good literature from the lowest class up, but not while the common school acknowledges no higher aim than a preparation for mercantile life. The "bad boys" complained of, have been delivered over to the dime novel fiend all their lives, and now their teachers suddenly spring Longfellow upon them. The result is perfectly natural. The soul does not begin its life in the graduating class.

The total amount of the Peabody fund is a little over \$2,000,000 and the income from all investments last year exceeded \$96,000. A statement of the distribution of income since October 1, 1889, shows that the total sum of \$87,695 has been expended. Of that \$26,000 went to the Peabody normal college. The rest was distributed in sums ranging from \$3,725 to \$9,655, in Alabama, Arkansas, Georgia, Louisiana, North Carolina, South Carolina, Tennessee, Texas, Virginia, and West Virginia.

HERE is something to ask a whole room full of intermediate boys and girls: Chicago's gain in population in the last ten years is said to be greater than the entire population of the city of Boston. What is the population of Boston?

THE Rochester, England, school board gives all pupils who have not less than 400 punctual attendances a seaside excursion each summer, with their parents and friends. This is the best artificial stimulus yet invented, for it not only puts speed into the heels of the children, but helpfulness into the hands of the family at home, as well as all special friends along the way.

As civilization advances all sorts and kinds of schools multiply; for example, the Episcopal church in this city has opened a training school for deaconesses, and similar organizations are to be established in Philadelphia, Cleveland, and Richmond.

We must commend the excellent spirit of the *Western School Journal* in criticising our remarks concerning the last meeting of the National Association. But if we have made "statements, several of which are exactly parallel to the truth—that is to say, the truth and they will never meet," it is because the reports of the St. Paul meeting were wrong. We know that there are reporters who neither fear God nor regard man, but we supposed that such persons were not employed by the officers of the National Association. Neither of the editors of THE SCHOOL JOURNAL was at St. Paul, and so the printed daily record was all they had to refer to in giving their readers what took place. Hence the comments. But the *Western School Journal* will not say that the election of Mr. Garrett was not determined upon before the nominating committee was appointed, neither will he say that it was not Mr. Canfield's intention to appoint a committee in the interest of this decision. It is generally believed that Mr. Garrett was foreordained to be the president of the National Association before the St. Paul meeting convened, and that Mr. Canfield helped make the foreordination.

PROFESSOR EUGENE G. HARRELL, editor of the *North Carolina Teacher*, and secretary of the Southern Educational Association, has been visiting the New York City schools, and is much pleased with his observations. Professor Harrell is unremitting in his efforts to put Southern schools ahead of all others in the world.

A VERY creditable exhibition of pupils' work was made at the Orange county fair recently. Supt. Dolph, of Port Jervis, pointed with pride to specimens of class work in form study and drawing, class work in clay, paper cutting and folding; designs in borders, cut, pasted, and drawn; patterns and representations from objects, consisting of stairs and groups of fruit, etc.; and drawing, conventionalizing, and arranging patterns from leaves. There were maps of the United States, New York, and Orange county, and a display of drawing books and of specimens of penmanship; also a natural history exhibit. Newburgh sent in a manual training exhibit, consisting of specimens of work during the sewing course, mechanical drawing from the manual training school, a pump, engines, etc. A model of a turning lathe made by three pupils was a fine piece of work.

THE report of the schools of the town of Eastchester, N. Y., submitted to the department of instruction by Com. Sandford, shows that they are in a very satisfactory condition. The expenditures are liberal and the attendance is large. The public school libraries of the town have 7,690 volumes. The commissioner and the people are to be congratulated on the high rank of the schools.

DR. HAILMAN and Miss Sarah L. Arnold did good work at the Martha's Vineyard summer school.

DR. WILLIAM A. MOWRY says that the recent occasion of the presentation of bouquets and flowers to the graduates of the Boston public schools, carried the thoughts of the clergymen present to the day of judgment, when the righteous should receive their prizes and go away into eternal blessedness. According to the Bible there will be two classes on that day of doom. Only one class was represented at the Boston celebration, as we understand it.

It is well to look on both sides—the dark as well as the light—sometimes. Here we have the dark side of North Carolina from the Hon. S. M. Finger, superintendent of that state. He says:

"In Virginia there is spent for public education on each child white and black, an average of about two and one half times as much money as is spent in North Carolina, and the average length of the annual session in Virginia is about twice that of ours. Not only so, but we are behind almost all the other Southern states. Except in a few of the cities, our public schools do not satisfy either their friends or their opponents. We levy only 12½ cents on \$100

of property (one and a quarter mills). The fact is that with so small a levy it is impossible to have an efficient and creditable system of schools. Count and see how little it amounts to on the assessed valuation of your property.

The *Southern Educator*, from which we clip this information, has a mission. Wake up the people, dear Educator. THE JOURNAL will be with you in the good work.

THE *Catholic Educator* of September 5 printed an article from THE SCHOOL JOURNAL, on "Productions of the Earth," and credited it. This is well; but on the same page Principal Bissell's excellent "Hints on Success in Teaching" were used without crediting THE JOURNAL. Why is this?

NEW YORK CITY.

ABOUT 785 new students have been admitted into the College of the City of New York. The entire college now has about 1,465 students, the largest number ever contained within its walls. The college is, however, prepared for them all, as during the summer an annex containing three new halls was erected.

MR. C. LORING BRACE has been unanimously appointed secretary of the Children's Aid Society in place of his father, the late Charles L. Brace, its founder and secretary.

THE College of the City of New York is a city institution; the University of the City of New York is a corporate institution. Many persons think the two are the same, but the fact is they are as distinct as Columbia and Princeton.

THE art schools of the Metropolitan Museum of Art began their winter session last Wednesday with more than three hundred and fifty pupils. The schools remain under the direction of Arthur Lyman Tuckerman. The life class is now in charge of H. Siddons Mowbray.

FROM December 10 to 20, 1890, a bazar will be held by the Teachers' Mutual Benefit Association of New York, at the Lenox Lyceum. The object of the association is to give pecuniary relief to retired or disabled members. It has accumulated a permanent fund of \$50,000, and now uses eighty per cent. of the annual dues for payment of annuities. When the fund reaches \$100,000, the whole of the annual dues will be used for this purpose. The bazar will be held in order to help increase the amount of this fund, and it is hoped that not only those who have been trained in the public schools of this city, but the community at large will give it a generous support. In connection with the bazar, an exhibition of the school work of the children of the schools of the city will be given by permission of the board of education. It will include specimens of the writing, drawing, sewing, etc., of all of the children.

ALL teachers and others who propose to pursue the courses in pedagogics offered by Columbia College for 1890-91, are requested to meet Prof. Nicholas Murray Butler in Room 46, Hamilton Hall, Columbia College, on Friday, October 10, between the hours of 3:30 and 4:30 P. M. The lectures will be given on Fridays at 4 P. M.

THE University School of Pedagogy has opened its fourth year with a largely increased attendance. Degrees are positively promised and the instruction is better methodized than in any former year.

PRESIDENT HUNTER, of the Normal College, delivered an admirable opening address before the University School of Pedagogy, last Saturday morning. The old Asbury church was packed by as intelligent an audience as was ever seen within its walls. Two courses are arranged, the junior and the senior,—the first leading to the degree of master of pedagogy, the second to that of doctor of pedagogy. As all doubt in regard to the conferment of these degrees is now removed, and as the course of study is finally fixed, the school will enter upon a new and most successful era. In fact, this fall's opening was the first opening of work on a substantial foundation. The profession of teaching is now established. Never before has a university undertaken to give dignity and permanence to this grandest of all callings. But now this has been done, and the results will affect all teachers everywhere. Uplifting here has come from above, just where many of the greatest reform forces have come in the past. We shall keep our readers informed as to the progress of this school.

LAST week the British association of steel and iron workers held their annual meeting in this city. It is an unusual thing for a foreign body to convene upon a distant shore, but notwithstanding its distance from home it brought together many men of distinction in all kinds of work, among whom were several who had given considerable attention to education. The Hon. Lyulph Stanly, a member of the London school board, was among those who had given a great deal of time to school affairs, and he certainly is a most thoroughly informed educational man for one who has not been a practical teacher. His investigations into the working of our American "system" were most earnest and thorough. In this city he met Supt. Jasper and President Hunt, and visited several public schools, among which was Henry P. O'Neil's, in Vandewater street, where manual training was first introduced and has been so successfully carried on. Mr. Stanly was so much interested in what he saw there that he took several of his English friends to inspect the work. We hope before long to lay before our readers a detailed account of Mr. O'Neil's methods. The readers of THE JOURNAL will be greatly interested in knowing exactly what was at first proposed and what has been actually accomplished.

THE female free school of stenography and type-writing connected with the General Society of Mechanics and Tradesmen began its fifth year last Thursday. Of over two hundred applicants, seventy-five only were accepted, after passing a severe examination in spelling, composition, etc.

THE educational work of the Twenty-third street branch of the Young Men's Christian Association began last Wednesday, three hundred and thirty-three students being enrolled. The gymnasium class numbers twelve hundred, there being besides over one hundred applicants. The courses are in German, phonography, type-writing, bookkeeping, arithmetic, writing, free-hand drawing, and vocal music.

TREASURE-TROVE for October will interest both the teachers and scholars by its bright, timely articles on subjects which concern school life; as also by its stirring stories and fine illustrations. Some of our young writers will turn first to the Prize Stories, in writing which they are learning so much about the use of language. "Star-gazing" will give some useful hints about the stars; "Words and Flowers" will tell something about golden-rod and aster, and other *compositae*.

The "Making of Homes" gives some new thoughts on a familiar subject. "The Hub of the Universe" shows some historic spots about Boston. "Work for Busy Fingers" speaks for itself. All these are illustrated. An account of "Some October Authors," of "How the Normans Came to Normandy," "Small Beasts of Prey," and "A Prince of Music, and A Prince of Magic," are full of pleasing information. So are the articles on "Scientific Industry, Humble Life in New York," "Some Interesting People," "A Great Cardinal's Promotion," "Hints to Our Girls," and "These Mortal Frames." These are only a part of the attractions and do not include the fiction.

WANTED AT ONCE.—Graduates from Oswego, Potsdam, Cortland, New Britain, Bridgewater, Westfield, and other normal schools for positions in graded schools in good lines of work. Write at once a letter about your preparation, experience, and ability, and state that you are willing to pay five per cent. of first year's salary for a position. Send copies of any testimonials you may have, and a photograph. Many calls for teachers are coming in. You will do well to write to us. Address all letters to H. S. Kellogg, Manager, 25 Clinton Place, N. Y.

High Art in Car Construction. A Palace Train to Washington, via Pennsylvania Railroad.

The Pullman Palace Car Company has just finished a new vestibule train of parlor cars for the Pennsylvania Railroad Company, and the same is now in service between New York, Philadelphia, and Washington on the Washington Limited Express leaving New York 10.10 A. M., Philadelphia 12.25 P. M., and leaving Washington on the north-bound trip 9.40 A. M., Baltimore 10.45 A. M. With its completion is presented a perfect example of the luxury and comfort enjoyed by the traveling American. The main interior body of the cars is of beautifully polished maple, with curiously designed brass finishings and velvet hangings, and carpetings of rich brown—these, together with the chairs, lounges, and ottomans, suggest the interior of some Oriental domicile. The smoking-room is very unique, as it is a private apartment entirely shut off from the body of the car by double bronze-leather doors; its interior is of polished oak and trimmings of dark green. The toilet-rooms have every modern improvement, bright with the polish of new nickel. Each car has the daintiest buffet, from which the lightest tempting lunch or a course dinner may be served, while speeding along at about fifty miles an hour, without the slightest annoyance whatever.

This train certainly is one of the handsomest links in the chain of fast service maintained by the Pennsylvania Railroad Company connecting our city with the nation's capital.

BOOK DEPARTMENT.

NEW BOOKS.

HEALTH FOR LITTLE FOLKS. Authorized Physiology Series, No. 1. New York, Cincinnati, and Chicago: American Book Company. 121 pp.

This little book treats the subject of physiology and hygiene in the simplest way, as it is intended to be used by pupils in the primary grades. Educators now appreciate the necessity of grounding young children in the principles of this science, as the great majority of them never reach the high school. This book was made with a view to temperance instruction. Mrs. Hunt, of the W. C. T. U. endorses the series. The picture at the head of the first chapter, representing a lady ringing the dinner bell, one boy running to the house and the others engaged with their bats and ball, is likely to strike the youthful mind quite forcibly. The opening chapter tells "Why we need to eat." The next on kinds of food, has illustrations showing the gathering of wheat and vegetables and the thrashing of wheat. Then comes a chapter on water, salt and lime, after which the subject of harmful drinks—those that contain alcohol—is treated at considerable length. Tobacco comes in for its share of condemnation. The blood, the nerves, the muscles, the bones, and other parts are then described. The illustrations are very clear and simple, as of course they should be in an elementary work. Assisted by this handsome little book, the teacher in the lower grades ought to be able to inspire great enthusiasm in the study of physiology and hygiene.

EDITORIALS AND OTHER WAIFS. By L. Fidelia Wooley Gillette. New York: Fowler & Wells Co. 59 pp.

Some years ago the writer of these "waifs" and another woman engaged in the work of editing and publishing a weekly paper in Detroit, Mich. The volume is made up of short paragraphs and poems written at that time. It contains a great deal of hopeful philosophy, expressed in short, clean-cut sentences.

LETTER WRITING: ITS ETHICS AND ETIQUETTE. By Arthur Wentworth Eaton, B. A. New York: Frederick A. Stokes Company. 78 pp. 75 cents.

The art of letter writing is one that is very generally practiced, yet now few there are who are proficient in it. It pays one in hard cash, aside from the satisfaction it affords, to be a good letter writer. This little book is sent out as an aid to this accomplishment. Some of the directions may seem at first glance to be superfluous but a short experience in a business house or any other place where a large correspondence is received, would convince one that they are not. The good points about the book are its excellent arrangement and brevity. The advice also is wholesome. The author well says: "Never write a grumbling or an ill-tempered letter, *Litera scripta manet*. An ill-tempered utterance always seems worse on paper than when it is spoken."

BEST SELECTIONS FOR READING AND RECITATIONS. No 18. Compiled by Silas S. Neff, B. O. Philadelphia: The Penn Publishing Company. 200 pp. Paper, 30 cents; cloth, 50 cents.

The first seventeen numbers of this series were published under the title of "The Elocutionist's Annual." The change in name is made because it is believed a more appropriate title is thus secured. Many pieces in this number have become favorites and others will surely become so when they have the wide circulation this book is sure to give them. It will furnish elocutionists with an abundance of fresh material and the home circle amusement for many a leisure hour. Much of the matter has been taken from the best magazines and periodicals. The book is bound to become as great a favorite as the numbers that have preceded it. It will frequently answer the question, heard so often in the school-room, "What shall I speak?"

THE PAINTER-POETS. Selected and edited, with an introduction and notes, by Kington Parkes. London and New York: Walter Scott, publisher.

It was the wish of the author to have all the selections in this little book bear actually upon the subject of painting, but this was not possible, for painters when they essay poetry usually fight shy of their own goddess. Some of those included were not painters by profession. There are many who are little known in the world of literature, but whose writings as presented here will compare favorably with those of the more famous artists. Among the best known whose verse finds a place in the book are Washington Allston, William Blake, Allan Cunningham, Thomas Hood, Samuel Lover, William Morris, Dante Gabriel Rossetti, John Ruskin, W. M. Thackeray and J. M. Turner. A few of the poems, cover eight or ten pages, but the most of them are dainty bits of word painting of a few lines or stanzas. There is much genuine poetry in the collection. In the notes at the end are given short sketches of the authors represented.

HUMAN MAGNETISM; ITS NATURE, PHYSIOLOGY, AND PSYCHOLOGY. By H. S. Drayton, LL.B., M. D. New York: Fowler & Wells Company, publishers.

People never showed more interest in the phenomena of animal magnetism than at present. They are no longer viewed in the vague, mysterious light of thirty or forty years ago, but have become the property of science. It may be added also, that students of the science, as a rule, do not, like Mesmer, attempt to shroud the phenomena in mystery, but are doing all they can to en-

lighten the public in regard to them. This volume gives a summary of the facts and principles bearing on the subject. It shows how the hypnotic control is obtained, tells what the best observers think of its nature, and supplies a variety of illustrations to indicate its extraordinary range of application in human life. There are pictures of Anton Mesmer and Prof. J. M. Charcot, who brought the subject of animal magnetism prominently before the public about a century ago. Various illustrations help to explain the text.

TALKS. By George Thatcher, the celebrated minstrel. Philadelphia: The Penn Publishing Co. 158 pp. Paper. 25 cents.

It is not often that a minstrel essays the role of author. These productions by Mr. Thatcher, whose name is as well known as any in his line, are full of drollery and will be appreciated by lovers of wit and humor. His account of his youth and his introduction to the stage, in the introduction, will be especially enjoyed. The book is an excellent one with which to while away an idle hour. Many good things might be got out of it for entertainments.

RHYMES FOR LITTLE READERS. A new color book. Lithographed from original water colors by Miss A. W. Adams. Boston: D. Lothrop Co. Oblong 4to. \$1.00.

We can easily imagine the pleasure that will be manifested by the little folks when they look for the first time at the illustrations in this handsome book. Harmony in the coloring has been observed without that excess of color that is sometimes seen in books intended for children. Many of the rhymes that are here illustrated will be familiar to the children, as they have long been nursery classics. The book will serve as a means of educating the artistic taste. It is destined to add to the delights of many homes.

THE GOOD THINGS OF LIFE. Seventh Series. New York: Frederick A. Stokes Company, publishers. \$2.50.

Those who relish "a little nonsense now and then," and it is said that men of the best mental caliber do relish it, will spend many pleasant moments over this charming book. Each page contains a large illustration with the remarks of the characters below, after the manner of illustrated papers. The humor and folly of society, its ridiculous situations and its false pretensions, are here shown with the aid of very meritorious artistic work. The book is bound in grayish blue cloth with an illustration across the top of the front cover, in blue, white, and gilt, showing dancing figures.

SYNOPSIS OF ENGLISH AND AMERICAN LITERATURE. By G. J. Smith, B. A. Boston: Ginn & Co. 125 pp. \$1.20.

The author has aimed to give a great deal of information in a small space. It will be especially valuable to those who want to know the main facts about those who have contributed to our literature, but who have not the time to read large works. In this book are given the author's full name, the dates of birth and death, the class of writers to which he belongs, the chronological place of that class in the development of literature, the best known works of the author, his contemporaries at home and abroad, and leading events in the general history of his time. In most cases, also, a few words of explanation or criticism are given, and the general characteristics of the various periods are briefly stated throughout the work. The author's relative importance is indicated by the style of type employed. For instance, in our literature the names of Irving, Bryant, Emerson, Longfellow, Lowell, and Hawthorne, are placed in the front rank of writers, as indicated by the heavy capitals: in the second rank come Daniel Webster, Cooper, Poe, Thoreau, W. H. Prescott, George Bancroft, Bayard Taylor, Whittier, Holmes, Mrs. Stowe; while a host of others are given italics, ordinary Roman type, or type of a smaller size, to indicate the next three classes. Of course this classification is merely the result of the author's personal judgment. Some might be inclined to sharply criticize him for misplacing their favorites, and there are probably none who would not disagree with him in regard to the rank of certain writers. It is hard to decide upon a thing that is so largely a matter of taste and individual judgment. We predict, however, that the book will be in great demand on account of the large amount of valuable and well classified information it contains.

ANNOUNCEMENTS.

THE HUMBOLDT PUBLISHING Co. have just issued "The Industrial Revolution of the 18th Century in England," by Arnold Toynbee. The work also contains several papers on leading questions of the day.

THE CASSELL PUBLISHING Co. announce "English Sanitary Institutions, Reviewed in Their Course of Development, and in some of their Political and Social Relations," by Sir John Simon, K.C.B.

D. LOTHROP COMPANY issue two capital stories of adventure—Grant Allen's "Wednesday the Tenth," and Willis Boyd Allen's "Lion City of Africa," and two illustrated quartos—the sumptuous edition of "The Poet's Year," by Oscar Fay Adams, and "Great Cities of the World," edited by Eldridge S. Brooks. A new edition of Prof. Nourse's "American Explorations in the Ice Zones," is also just ready.

THE SCRIBNERS are about to publish new editions of the "American Boys' and Girls' Handy Books," by Daniel C. and Lina and Adella B. Beard. To the former of these Mr. Beard has added sixty new drawings to illustrate new games and contrivances which he has incorporated in this latest edition.

D. APPLETON & Co. in response to many requests, have issued "The 'How I was Educated' papers from the *Forum Magazine*. They also issue "Frebel's Education of Man," translated and furnished with ample notes by W. N. Hallman, A.M.

GINN & Co. have ready Tarbell's "Lessons in Language," in two parts, a series which is intended to harmonize language and grammar, and make expression through written forms as natural as thought and speech.

S. C. GRIGGS & Co. will soon issue "Civilization; an Historical Review of its Elements." The author is Charles Morris, of Philadelphia, who is already well and favorably known as a thoughtful and scholarly writer.

T. Y. CROWELL & Co. will publish this fall a new edition of "Jane Eyre," with forty-eight illustrations engraved by Mr. Andrew.

HOUGHTON, MIFFLIN & Co. have lately added another volume to their "American Statesmen" series. George Pellet tells in an interesting way the story of the career of John Jay.

JOHN B. ALDEN gives the public a volume, entitled "The Prophet of Palmyra," by Thomas Gregg. The author arraigns and condemns Mormonism.

LEACH, SHEWELL & SANBORN have lately published a "Rudimentary Psychology for Schools and Colleges," by G. M. Steele, LL.D.

T. NELSON & Co.'s recent book "The Lost Ring," by M. Clarke Melville is a Scottish Historical romance of the days of King James and Andrew Melville.

MACMILLAN & Co. will issue at once a new volume of stories by Rudyard Kipling, uniform in size with "Plain Tales from the Hills."

THE CENTURY Co. offer the volume of the *Century* from November 1889, to April, 1890. It would be hard to find 950 miscellaneous pages that will meet the taste of so many different kinds of people.

MAGAZINES.

Herbert Ward, the African traveler, has written for *Scribner's Magazine* an article entitled "A Tusk of Ivory." It gives the history of the tusk from the time the elephant is hunted by the natives of Africa until the ivory is sold in the market. In the November number Frank French will have an article describing the daily life of a country doctor. The text will be illustrated with his own drawings which he has himself engraved on wood. The series by R. G. Zogbaum on the voyage of the White Squadron will be completed in the November number. Josiah Royce, who has traveled much in the antipodes, will contribute to an early number "Some Impressions of Australia." An Australian edition of the magazine is now published, so that it is on sale almost simultaneously in America, England and Australia.

The Magazine of American History for October has an excellent frontispiece portrait of Rev. Dr. Storrs. The leading article is by Dr. Storrs, and treats of "Sources and Guarantees of National Progress." Dr. Theodore W. Dwight writes of "The American Flag and John Paul Jones," and Mrs. Lamb has an article on "Southold, and her Historic Homes and Memories." Among the other articles are: "About Some Public Characters of 1786," "The French Canadian Peasantry," and "The Story of Roger Williams Re-told."

The October *Babynood* has a contribution, by Dr. Sarah E. Post, on "Massage." The article is profusely illustrated and gives directions as to the various kneading motions.

Noticeable in the October *St. Nicholas* is the article "Through a Detective Camera," written by Mr. Hlack, the well-known amateur, and illustrated with characteristic bits of child-life. Frederic Villiers, the famous English war-correspondent, tells of his narrow escape from asphyxia, because of a "Copper Brazier" containing crude charcoal used in warming an inn room at a Serbian hotel. A real juvenile story is "Betty's By and By," in which Julie Lippmann tells a heedless heroine's experiences in that great rendezvous of procreation. Other features are a short illustrated life of Edward the Sixth; a toothsome poem by James Whitcomb Riley; a bright story by J. O. Davidson, telling how a Yankee with a rifle proved himself a match for a Chilian torpedo boat; a clever poem designed to teach the holiness of kings' and queens' grandeur, and many other bright pictures, clever hits in verse, etc.

The Popular Science Monthly for October lays before its readers a pleasing variety of articles, on live subjects by the best writers. We will mention some of them. "Barrier Beaches on the Atlantic Coast," by F. J. H. Merrill will prove of much interest, as will also "The Earthly Tabernacle," by Olive Thorne Miller; "Liquor Laws not Sumptuary," by Rev. George F. Magoun, D.D.; "The Migration of Symbols," by the Count Goblet d'Alviella; "Mothers and Natural Science," by Mary Alling Aber; "Cotton-Spinning South and North," by Henry V. Meigs; "Invisible Assaults of Health," by Samuel Hart, M.D.; "The Evolution of Chemical Truth," by M. Louis Olivier, and "Irrigation in China," by General Tchong Ki Tong.

Mrs. Van Rensselaer Cruger, the author of the successful book "A Diplomat's Diary," is also the writer of the story now current in the *Cosmopolitan* magazine and entitled "A Successful Man." Captain Charles King, who recently visited St. Paul and Minneapolis for the magazine, has prepared for it an illustrated article entitled "Twin Cities of the Northwest."

The October number of the *North American Review* contains an article, by Prof. Bryce, on "The Powers of the Speaker of the House of Representatives." The Hon. Andrew D. White has an article on "The Future of American Universities," "The Trend of Labor Organizations in Great Britain," is the title of an article by Michael Davitt. The second and concluding part of the Mexican minister's contribution to "The Pan-American Conference" appears in this number. "The Peculiarities of the South" are set forth in an interesting and instructive manner by Prof. N. S. Shaler.

A Few Words on Indigestion.

It is not our intention to give the history of the Canadian, Alexis St. Martin, to whom a shot through the stomach brought fame, nor to tell you how long it takes to digest Strassburg pie or sourknot. No doubt you know by experience. It has been well said: "Some men never seem to know they have a stomach." However, we do not write for this fortunate class.

The celebrated Purdon thoroughly "digested" the Laws of Pennsylvania. But there are few Purdons. The old Romans do not seem to have suffered from indigestion. The gastronomic fates of our Teutonic forefathers are almost incredible, and we read the accounts of "Homeric Banquets" with a feeling approaching to incredulity.

Our manner of life has impaired our digestive powers. We do not spend enough time in the open air; we rise early and retire late to rest. We bolt our food, and do not rest afterward. To these and other incidents of a high degree of civilization is to be traced one of our most common maladies, Dyspepsia. We shall not attempt to portray the mental or bodily condition of its victims. We shall simply point out a way of escape, and refer you to a work, giving a full account of many cures, with abundant testimonials, which you can verify by writing to the patients themselves.

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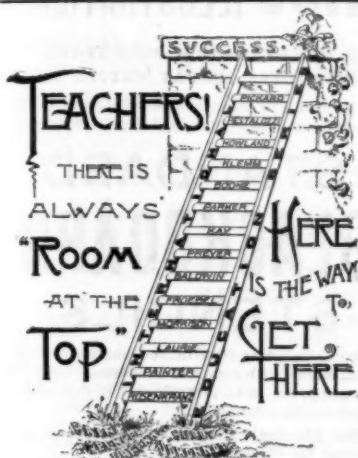
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IN THE KINDERGARTEN

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AN OPEN COMPETITIVE EXAMINATION

of applicants for the position of Kindergarten Teacher in the State Institution for the Blind, at Batavia, N. Y., will be held at that Institution on Wednesday, October 22, 1890, commencing at ten o'clock A. M. Salary \$400 per annum, with board. Blank applications and other information may be had by addressing the Secretary of the New York Civil Service Commission, Albany, N. Y.

Albany, N. Y.,
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Those acquainted with him from boyhood knew that early griefs tinged his whole life with sadness. His partner in the grocery business at Salem was "Uncle" Billy Green, of Tallula, Ill., who used at night, when the customers were few, to hold the grammar while Lincoln recited his lessons.

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"After Ann died," says "Uncle" Billy, "on stormy nights, when the wind blew the rain against the roof, Abe would set thar in the grocery, his elbows on his knees, his face in his hands, and the tears runnin' through his fingers. I hated to see him feel bad, an' I'd say, 'Abe don't cry; an' he'd look up an' say, 'I can't help it, Bill, the rain's a fallin' on her.'"

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it," is what her position tell the dog. Her
legs, concealed under her fur, are ready
for a spring; her claws are unsheathed,
her eyes never move for an instant from
the dog; as he bounds wildly from side to
side, barking with comical fury, those
glittering eyes of hers follow him with the
keenest scrutiny. If he plucks up his
courage to grab her, she is ready; she will
sell her life dearly. The sound of a dog's
bark in the next street attracts his eyes and
ears for a moment, and when he looks
back the kitten is gone! He looks down
the street and starts wildly in that direc-
tion, and reaches a high board fence just
as a cat's tail—a monstrous tail for such a
little cat—is vanishing over the top of it.
He is beaten; the cat showed not only
more courage than he did, but a great deal
more generalship.

On entering one of the crowded and
primitive old cities of India one cannot
help wondering to whom all these animals
belong, and why this bullock is blocking up
the narrow street, or ruminating in the
front doorway of a fine house. But we
are not long in finding out that these ani-
mals have quite as much right to their
share of the street as we have. For the
most part, all these beasts, save the mon-
keys, are gentle and well-behaved, rarely
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A gentleman living in Hartford, Conn.,
was out examining his rose bushes, when
to his astonishment he discovered a live
chameleon on one of the shrubs. It was
of a beautiful green color, matching the
foliage surrounding it, was about four in-
ches long, and its eyes were as bright as
electric sparks. When an attempt was
made to capture it, it glided away among
the leaves, in a stealthy manner. The ani-
mal was one of four a neighbor brought
from Florida.

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Some habits of crocodiles have been
lately described by M. Voeltzkow. Travel-
ing in Wituland, he obtained in January
last 79 new-laid eggs of the animal, from
a nest which was five or six paces from the
bank of the Wagogona, a tributary of the
Ooi. The spot had been cleared of plants
in a circle of about six paces diameter,
apparently by the crocodile having wheel-
ed round several times. Here and there a
few branches had been laid, but there was
no nest building proper. The so-called
nest lay almost quite open to the sun (only
a couple of poor bushes at one part). The
eggs lay in four pits, dug in the hard, dry
ground, about two feet obliquely down.
Including eggs broken in digging out, the
total seems to have been 85 to 90. Accord-
ing to the natives, the crocodile, having
selected and prepared a spot, makes a pit
in it that day, and lays about 20 to 25 eggs
which it covers with earth. Next
day it makes a second pit, and so on.
From the commencement it remains in the
nest, and it sleeps there till the hatching
of the young, which appear in about two
months, when the heavy rain period sets
in. The egg laying occurs only once in
the year, about the end of January or be-
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